



Global Trade in Greenhouse Gas Control

Market Merits and Critics' Concerns

by *Jonathan Baert Wiener*

A world market for “greenhouse gas” emissions abatement services could lower the costs of preventing global climate change, widen the availability of climate-friendly technology, and engage more countries in emissions reduction efforts. So why is the United States having such a hard time getting other countries to like the idea?

Governments around the world are negotiating to reduce the amount of heat-trapping “greenhouse” gases (GHGs) we emit into the atmosphere. The challenge is to cut the emissions that may be changing the world’s climate without hobbling the world’s economies. One of the ways in which the international community could meet this challenge is to create a world market for emissions abatement.

Market Options

Any international treaty intended to prevent global warming would need to impose and enforce limits on nations’ emissions of GHGs. One approach would be to require that each nation stay within its limit on its own. The market alternative is to require the same global limit while allowing flexibility across nations in the locations where actual reductions are achieved.

Two kinds of international markets for GHG emissions abatement can be envisioned. One is a formal “cap and trade” system similar to the one adopted by the United States in 1990 to control the sulfur dioxide (SO₂) emissions that cause acid rain. An international treaty would establish a global cap on aggregate GHG emissions for some period of time and specify shares

of emission allowances for each participating country. The governments of these countries would allocate their allowances to the private sector. Worldwide allowance trading would reallocate abatement efforts to those who could do so most cost-effectively: emitters with high costs of abatement would seek to buy additional allowances, and emitters with low costs of abatement would undertake additional controls and seek to sell unneeded allowances. Organized exchanges would facilitate trades.

For each accounting period established by treaty, a country’s report of its actual emissions (subject to monitoring and verification) would be compared with the allowances held by its emitters. If a country’s emissions exceeded total allowances held, it would be out of compliance with the treaty.

The second kind of market envisioned is “informal.” An international agreement would set national limits on emissions but not allocate formal allowances. Participating countries could meet their targets not only by investing in GHG emissions reductions at home but also by purchasing credits for emissions reductions in other countries, including in countries not subject to an overall emissions target.

This informal system is similar to the “pollution offsets” programs that the United States has employed for new emissions sources in certain areas. It is essentially the system of “joint implementation” (JI) outlined in the Framework Convention on Climate Change signed at Rio de Janeiro in 1992. In the sequel in Kyoto in December, the United States is expected to press other parties to the framework convention both to institute a formal international market in tradable GHG emissions allowances among countries with caps, and to recognize official credits for JI worldwide.

The Case for Emissions Trading

Why is the United States keen on establishing a market for international trade in emissions allowances? One of the key draws is cost-effectiveness. The cost of reducing GHG emissions varies significantly from place to place. Yet the global environmental benefits are essentially independent of where emissions are reduced. Numerous studies indicate that flexibility as to where GHG emissions abatement can take place would cut the estimated total cost of compliance with emissions caps considerably—perhaps by 50 percent or more.

The United States has used allowance trading to achieve some of its greatest environmental successes, such as phasing out lead in gasoline and cutting emis-

sions of SO₂. The cost savings in the lead and SO₂ cases have been substantial—as much as 50 percent or more compared with a control policy in which no trades were allowed. The SO₂ policy has also stimulated energy efficiency investments and the use of new abatement technologies. And the SO₂ experience suggests that a more cost-effective, market-based policy enabled Congress to sign on to more pollution control than it would have if control were more expensive. Similarly, reducing the cost of GHG abatement would likely lead countries to undertake more abatement than they otherwise would.

Depending on how international GHG abatement responsibilities are allocated, allowance trading could direct the flow of substantial resources from richer to poorer countries, where abatement costs appear to be relatively lower. These resources—perhaps exceeding all current official development aid—would help developing countries shift to a more prosperous but lower-emissions development path, and would attract their participation in the GHG abatement regime at a time when their emissions will soon account for over half the world total. (And if developing countries do not participate, industrialized countries concerned about their economic competitiveness relative to developing countries are unlikely to sign on.)

Generic Concerns

Despite its advantages, many countries express concerns about creating an international emissions trading system. Most of the concerns they cite, however, would apply to any internationally based emissions control regime. Some are problems that trading could actually ease.

A fundamental challenge for any treaty is deterring “free riders”—nonparticipating countries that benefit from efforts to reduce emissions without adhering to limitations themselves. If free riding were not deterred, the entire collective regime might unravel. Adding allowance trading to a GHG treaty could make free riding less tempting. For industrialized countries, it would lower the treaty “price of admission” by allowing them to cut GHG emissions in the most cost-efficient way. For developing countries, allowance trading would raise the profits to be made from treaty participation, since industrialized nations would purchase allowances and credits from them.

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Emissions “leakage” is another problem that would afflict any subglobal treaty, whether it employed trading or not. The problem occurs when reductions achieved in one place only encourage emissions to grow where caps do not apply. Such leakage could arise in the short term as emissions controls lowered world fossil fuel prices, and in the long term as industries relocated to avoid emissions controls.

Informal JI projects probably could lead to some leakage on a local scale, if credits purchased from a project resulted in emissions growth elsewhere in a country not subject to a cap. Care would be needed in project design and the calculation of JI credits to account for such leakage. (Formal allowance trading among capped countries poses no such local leakage concern.) On a global scale, however, both JI and formal trading could reduce total emissions by inhibiting free riding and attracting more global participation in emissions control. By lowering abatement costs, GHG markets would give industries less reason to relocate to escape controls.

Another concern is the effect that a market would have on the ability to forecast “baselines”—what amount of emissions might occur in a given time and place and how much abatement actually was achieved. Under JI it might be difficult to gauge what emissions otherwise would be in a host country not subject to an emissions cap. (A formal trading market among capped countries does not raise this concern.) But prohibiting JI credits because of uncertainty would eliminate the opportunity to engage countries without national emissions caps in early GHG control efforts, as well as the opportunity to obtain low-cost abatement services in those countries. A better approach is to allow both cap-and-trade and JI, and to use benchmark rules to assign uncertainty-adjusted credit to JI projects. Investors could seek extra credits for providing more reliable emissions accounting, thus creating incentives to improve measurement capabilities in developing countries.

Critics also worry that it would be difficult to allocate emissions allowances among countries. But this problem is unavoidable in any climate agreement; emissions trading just makes allocations explicit. And without trading, dispositive national caps would be much harder to negotiate. If they had flexibility to reallocate emissions allowances through trading after a treaty had been signed, negotiators would face less pressure to devise ideal, permanent allocations in the treaty itself.

Tax v. Trade: The Pros and the Cons

How does imposing a tax on greenhouse gas emissions compare with instituting a market for allowance trading? In economic theory, the two could achieve identical results. In practice they could be quite different.

A tax would offer more certainty about the costs involved in emissions reductions, since the tax rate would be fixed in advance, whereas the price of emissions allowances could vary. But a tax would offer less certainty about the amount of emissions control achieved, since it would not establish emissions caps.

A tax would not incur the transaction costs of allowance trading, but it would incur administrative costs to collect.

A tax system could be circumvented: national subsidies could be funneled to high-emitting industries to buffer the tax, distorting competition and increasing emissions.

And a tax would not create an automatic mechanism for transfers of resources and technology from richer to poorer countries. Such transfers are critical to getting developing countries engaged in GHG emissions reductions, and thus to getting competitiveness-conscious industrialized countries to act as well.

Specific Concerns

Some concerns do apply with special force to market-based emissions trading regimes. First, should the costs of arranging transactions in an emissions abatement market be high, they would impede trades and raise total costs. These “transaction costs” include searching for trading partners, negotiating deals, securing regulatory approval, monitoring and enforcing deals, and insuring against the risk of failure. Evidence from previous U.S. “environmental markets” such as the lead phasedown, the Los Angeles smog control program, and the Fox River water pollution control program suggests that such costs can determine the success or failure of a trading system.

The transaction costs of JI appear to be very high. Partners are hard to identify, each negotiation is novel, each project must be approved by the host and investor governments, and each investor must monitor its own projects. Moreover, JI typically involves investors’ supporting and bearing the risk of entire projects. JI transaction costs could be reduced, however, through brokers (many of which are emerging), information exchanges, streamlined approval processes, accredited monitoring agents (including environmental

nongovernmental organizations), mutual funds and other means of risk diversification, and official credit.

The costs of transacting in a formal allowance trading market would be much lower, especially if fungible allowances were traded on organized exchanges. Indeed, reducing transaction costs would be a central goal of a formal system.

Second, a global allowance market could be impeded if national governments interfered in global trading. To be fully cost-effective, the entities actually responsible for GHG abatement must do the trading. Assigning allowances and credits to these entities will galvanize decentralized competition, creativity, and flexibility. But this approach might not be carried out well (or at all) in countries where the state is an active supervisor or owner of industry.

And national governments might try to influence the world abatement market to their advantage, obstruct allowance trades, or otherwise depart from the conditions of well-functioning markets assumed in the estimates of cost savings. Such meddling might be limited by international trade law, depending on how this law ends up applying to GHG allowances.

Third, concentrated power over allowance or credit prices could arise—on the sellers' side through a cartel or a large state-run energy company, or on the buyers' side through a sole-purchasing agent for industrialized countries. Unlike domestic antitrust law, international law has no basic framework to combat such "market power." Climate treaty features such as less-than-unanimous voting rules for admitting new participants into the abatement market, or automatic phased inclusion of countries upon meeting pre-set criteria, could thus be crucial.

Understanding the Opposition

On balance, international GHG emissions trading appears to offer compelling advantages—lower emissions-reduction costs, valuable resource and technology flows, and greater participation in emissions reduction efforts. So what explains the opposition?

Clearly, some of it is due to misunderstanding and to genuine doubts that the system will work as envisioned. And some of it reflects a fear that such a market would lead to "carbon colonialism," if wealthy investors could depress allowance and credit prices,

leading poorer countries to sell out their futures at a loss. This is a sincere concern about market power and must be addressed on its merits.

But other motivations appear to be at work as well. Some may feel it is unfair to include poor countries in a market-based control regime; but allowance trading would benefit (not harm) poor countries, and excluding developing economies would invite leakage and undermine a treaty's environmental effectiveness. Others may reject trading because their objective is not so much to protect the climate as it is to combat what they view as immorally extravagant lifestyles and excessive energy consumption. Some bureaucrats may disfavor private market transactions because they gain from their ability to manipulate official government aid more adroitly.

Wealthy countries with comparatively low abatement costs (say, in Europe) may prefer a less flexible control regime than emissions trading. Although less flexibility would cost them a little, it would cost their trade rivals (the United States and Japan) even more—a new global version of the "predation by regulation" phenomenon.

Opposition might also mask a desire to gain leverage over the greenhouse gas emissions reduction goal (target or cap). Advocates of aggressive climate protection may be withholding support for trading until it is paired with a stringent cap—risking a costly treaty or no agreement at all. Meanwhile, skeptics of aggressive climate policy may fear that cost-effective policy tools are an all-too-enticing "fast train to the wrong station," inducing premature adoption of an overly stringent cap. Of course, the goal of climate policy should be chosen with great care. Yet these skeptics' gambit of urging a higher-cost "slow train" (in the hopes that it will derail any GHG limitations agreement) may just invite "Murder on the Orient Express"—a treaty that is both higher in cost and less environmentally effective—a "lose-lose" luxury train to the wrong station.

Jonathan Baert Wiener is associate professor at the Law School and the Nicholas School of the Environment at Duke University. Previously he was the senior staff economist for environmental issues at the President's Council of Economic Advisers, as well as a senior aide on environmental policy issues at both the Office of Science and Technology Policy and the Department of Justice. In those capacities he helped draft and implement the Framework Convention on Climate Change.