EMISSIONS TRADING FOR GLOBAL WARMING

by James L. Johnston

GLOBAL WARMING AND ITS PREVENTION have dominated the international debate over environmental policy. Those who advocate reducing man-made emissions of greenhouse gases are calling for sweeping and costly changes in the way energy is used around the globe. Advocates of such changes, most prominently spokespersons for the Clinton Administration, have claimed that an emissions trading program under a climate change treaty would dramatically reduce the costs of such changes.

But an examination of the performance of two domestic emissions trading programs finds that they fall well short of advocates' claims. Moreover, the international nature of the proposed greenhouse gas trading scheme that the Kyoto Protocol allows causes complications comparable with those experienced during the Law of the Sea negotiations. Emissions trading is unlikely to rescue the Kyoto treaty, which is based on unproven science, the implementation of ineffective abatement measures, and a reckless disregard for the costs to society.

THE MEETING IN KYOTO

In December 1997 representatives of 159 countries met in Kyoto, Japan and adopted a protocol to reduce emissions of six greenhouse gasses thought by some to cause global warming. The protocol legally obligates developed countries to cut their emissions by an aggregate of 5.2 percent below 1990 levels before the year 2010. The fifteen nations of the European Union will reduce their emissions by 8 percent, the United States will reduce its emissions by 7 percent, and Japan will cut its emissions by 6 percent. Developing countries are not obligated to cut their emissions at all. Indeed, a provision for voluntary participation of developing countries was completely eliminated from the protocol.

A commitment to emissions trading as a means to mitigate the burden imposed by the policies to reduce greenhouse gases was almost rejected at the Kyoto meeting. China and many other developing countries strongly opposed it. The issue was barely saved by postponing its consideration until the November 1998 meeting in Buenos Aires. But at that meeting those issues were again judged too complex to resolve. Delegates put off the decisions for another two years.

The American delegation went to the Kyoto conference with a strong stand to avoid reducing emissions below the 1990 level and to use a system of emissions trading to help achieve the targets decided by the conference. Moreover, President Clinton insisted that developing countries participate in reducing their emissions, at least voluntarily. The agreement in Kyoto was a disappointing surrender of stated U.S. objectives. It requires the United States to reduce emissions below the 1990 level and entirely exempts developing countries from any reductions.

Even if the original goals of the American delegation had been achieved, the resulting agreement would have been defective. The pursuit of a treaty has occurred despite the serious doubts expressed by a substantial part of the scientific community. Those include questions concerning the extent of global warming, whether it has been caused by human activity or is a natural climatic fluctuation, whether it will have any significant adverse effects on humans, whether it might have beneficial effects as well, and whether government policies can head off future warming. For example, the title and substance of Richard Kerr's article "Greenhouse Forecasting Still Cloudy" in the prestigious journal *Science* of 16 May 1997 points to serious problems in the case presented by those who believe in the dangers of global warming. While Janet Yellen, Chair of the Council of Economic Advisers, claims that economic effects will be modest, a 1998 study by the Energy Information Administration and a 1996 study by WEFA conclude that the costs to energy consumers in the United States will be substantial. And as Gregory Benford points out in the November 1997 issue of Reason, the treaty also ignores the availability of less costly abatement techniques.

Tom Wigley, a senior scientist at the U.S. National Center for Atmospheric Research, recently calculated that if every nation met its obligations under the Kyoto Protocol, the earth's temperature in 2050 would be lower by only 0.07 degrees centigrade.

EMISSIONS TRADING AND THE CLEAN AIR ACT

The scenario for dealing with the supposed global warming problem is hauntingly similar to the events leading up to the enactment of the acid rain portion of the Clean Air Act

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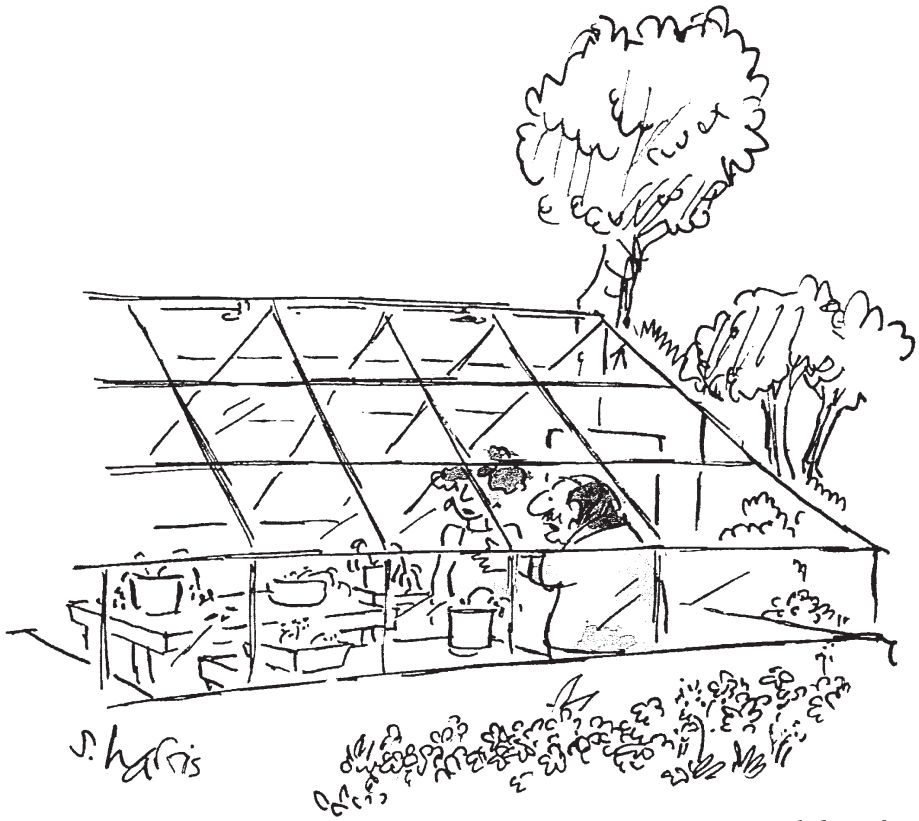

Amendments of 1990. Congress enacted that bill despite the findings of the National Acid Participation Assessment Program's July, 1990 report, *Acidic Deposition: State of Science and Technology*. The report claims that the scientific basis for acid rain was poorly understood and probably deficient, and that there were readily available techniques, such as adding lime, to deal with the problem of acidic lakes.

The saving grace of the Clean Air Act was to be the emissions trading system for sulfur dioxide. The idea was to allow sources with high costs of abatement to buy allowances from other sources who had low costs of abatement and who reduced their emissions below the required level. The plan was supported by a broad coalition of academics, policy analysts, and even some environmentalists, notably the Environmental Defense Fund

However, the design of that trading system was severely flawed. (See Jim Johnston, "A Market without Rights: Sulfur Dioxide Emissions Trading," *Regulation* Fall 1991.) Rather than a simple system based on existing legal institutions, a government market was established. It had the usual arrangement of special features to benefit favored constituencies and it subtly tinkered with the nature of the allowances to be traded. One of the features was a banking arrangement whereby the allowances would never expire until they were used. It also included a complex, so-called "Dutch auction" for the sale of government allowances. That approach was intended to give a higher price to the allowances than otherwise would prevail for a simple spot or futures contract. But as Timothy Cason showed in the September 1995 issue of the *American Economic Review*, the opposite occurred.

The design of the government market was too clever by half. Under the Act, the government explicitly absolved itself of responsibility for any future changes in the system design that might lead to a wealth loss by participants. The mechanism used denied property right status to the allowances to be traded. It was a thinly veiled attempt to circumvent the Fifth Amendment of the Constitution, which prohibits a government taking without compensation.

The effect of the system design was to retard trading volume and reduce the value of the allowances. In an August 1997 article in *Public Utilities Fortnightly*, Joseph Kruger and Melanie Dean point out that three-quarters of the transactions from March 1994 to March 1997 were transfers within each utility's own corporate structure where property rights are more easily enforced. Only a small minority was traded between different utilities.

The usefulness of the system was thereby limited to insurance against an unusually warm summer when the peak load would push an electric utility's emissions above the allowable limit. The nature of this kind of demand is to fill a notional

strategic reserve of allowances. Once the reserve is filled, no new allowances are needed, except to replace those used for the occasional emergency.

More reductions of sulfur dioxide will be required during Phase II which begins in 2000. But that does not mean that trading will increase during Phase II. Since the Phase I targets from 1995 to 1999 are more easily reached, allowances earned from the over reduction of emissions were easier. That implies that the allowances earned during Phase I will be used mainly during Phase II. The strategy for an electric utility would be to earn allowances early and save them for peak events during Phase II.

Deregulation of electricity, which implies the existence of more nonutility power generators in the Phase II time period, also reduces the need for allowances in the future. The new generation capacity will most likely be used to supply electricity during peak periods of demand. They will be fueled by natural gas and put out low emissions of sulfur dioxide, oxides of nitrogen, and other pollutants. Since the new power generators will mostly displace existing coal generators, even more allowances will be left over from Phase I to help incumbent utilities meet peak loads.

A lot of favorable commentaries have focused on the fact that reductions of sulfur dioxide emissions have occurred ahead of schedule. See, for example, A. Denny Ellerman, et al. in the 1997 book *Emissions Trading under the U.S. Acid Rain Program*. But as the proceeding analysis demonstrates, it is clear that "success" has come because of the fairly small options demand, not because the trading system was useful in averaging differences in abatement costs.

EMISSIONS TRADING AND RECLAIM

The same conclusion about the problems of emissions trading regimes can be drawn from the Southern California Air Quality Management District's Regional Clean Air Incentives Market (RECLAIM) system for reducing nitrogen oxide and sulfur dioxide in the South Coast Air Basin (SCAB). The record there has been one of small trading volumes and low prices for credits. Indeed, during the early years a majority of the credits traded at a zero price.

RECLAIM requires the best available control technology as did the command and control system that RECLAIM replaced. Thus, there is serious doubt about any significant differences in abatement costs among emission sources. Without those differences, the primary rationale for trading is dramatically diminished.

As if that were not enough, RECLAIM was instituted during a recession, when investment plans were on hold. With the introduction of RECLAIM, many businesses simply choose to invest outside of the SCAB and serve the Southern California market from a distance. Consistent with that hypothesis is the persistent lag in the economic recovery of Southern California

that continues today.

Arguably the most serious flaw in the RECLAIM system is the same one found in the Clean Air Act Amendments of 1990: The government refuses to take responsibility for its actions. Specifically, RECLAIM denies property-rights status to the credits and warns that the government will not take responsibility for subsequent changes in the system design which adversely affects investments taken in good faith. Faced with the choice of spending money on emissions credits, or investing outside the region, many businesses will simply choose to relocate. To the proponents of the system, this looks like a reduction in emissions ahead of schedule. But those results come not from the conservation of resources, but from economic stagnation in the region.

The RECLAIM system also incorporated a previously existing arrangement that allowed refiners to purchase older automobiles manufactured before emission limits came into effect and to retire them from the fleet as a way to further reduce emissions. The refiners then used the savings in emissions, oxides of nitrogen mainly, to offset their own refinery emissions. The latter included the emissions resulting from the production of reformulated gasoline.

Resistance to the automobile scrapping arose from car enthusiasts; in particular the ones who wanted to use the junkers for spare parts. There were two reactions to the complaints of the antique car collectors. The refiners agreed to allow the enthusiasts five days to scavenge parts from the junkers. This probably would have worked to the satisfaction of both refiners and car collectors. But at the last minute, the Southern California Air Quality Management District, the government body with the authority over the program, decided to limit the scrapping to just 30,000 autos per year. More restrictions were added later. The result was a triumph of regulation over market forces. UNOCAL, the oil company that developed the plan, announced in 1997 that it is shutting down the scrapping system it operated for itself and others because of increasingly onerous regulation by the District.

EMISSIONS TRADING AND GLOBAL WARMING

Having seen how two existing emissions trading systems fall short of their designers' hopes, it might be asked: how likely are the prospects for success of a similar system under the climate change treaty? Two systems are envisaged. One is a "bubble" for the fifteen nations of the European Union and the other is an international "umbrella" for a group led by the United States.

The bubble concept has been characterized as an exclusive trading arrangement and seems to imply only government-to-government trading. The targets established in Kyoto for individual countries in Europe vary, but reach an average of 8 percent below 1990 levels. That would allow each country to select its own policies-to-control emissions, ranging from a market-based approach to a command-and-control system.

In response to the European bubble, the United States, Canada, Japan, Russia, and New Zealand formed what they call an umbrella. The umbrella would presumably be based on each country's identified sources of emissions and the corresponding amounts and reduction targets. A government-organized market for the trading of excess emissions reductions would presumably be constructed within each country and harmonized across the five countries. How can that be done in the treaty when the Europeans are operating another system?

President Clinton has indicated that the U.S. system will be driven by tax reductions and R&D subsidies for emissions control. For example, allowances might be auctioned off, with the purchaser allowed a tax credit for the purchase price. That differs from the sulfur dioxide allowances and RECLAIM credits that were distributed "free" to enterprises. If Europe followed the latter model, can the umbrella regimes be harmonized with respect to taxes and other environmental regulations? That would seem to require both international tax and trade negotiations, thereby adding substantial complexity to the system.

It is difficult to see how there could be any trading by individual emission sources across national boundaries. The treaty recognizes only "state parties" as the trading entities. Therefore, the differences among national regimes could preclude what would otherwise be very interesting trades. Consider a multinational energy company that would like to reduce emissions by averaging them over all of its international operations. Each company would have to deal with as many regimes as there are countries of operations, including some whose government actively opposes emissions trading. Remember the lesson from trading under the Clean Air Act, electric utilities deal overwhelmingly with themselves, not others. The climate change treaty would seem to preclude that option.

Another potential problem is the government's refusal to take responsibility for its mistakes. Both of the U.S. trading schemes have that feature. It will, in all likelihood, be a part of the international system. Indeed, it is unlikely that any trading arrangement would be allowed to impinge on the principle of sovereign immunity for operations within a particular country. Dispute settlement under the UN conference on the Law of the Sea is largely unworkable because it will be dominated by developing countries, which are hostile to ocean resource recovery. Under the Kyoto Protocol the same group of developing countries that oppose their own emission reductions would dominate the dispute settlement procedures. At the very least such a regulatory arrangement would put a dead hand on innovative actions outside the expected trading pattern. For example, would the planting of trees in developing countries pass scrutiny, or would it suffer the same fate as the old auto scrapping program under the RECLAIM system?

The Kyoto Protocol also calls for a "Clean Development Mechanism" intended to be the depository for fines collected from companies that exceed emission targets and, presumably, for the tax receipts and other revenue from emissions reductions in developed countries. That creates a strong incentive to divert funds from businesses in developed countries into the Clean Development Mechanism and ultimately, into the trea-

suries of developing countries or perhaps the pockets of their leaders.

The Clean Development Mechanism is also supposed to facilitate technology transfers. Using the excuse that they must monitor compliance with pollution targets, foreign observers could legally compel U.S. utilities, for example, to reveal the details of their generating technology. Directly or indirectly, proprietary information or patented technology could find its way to other governments and then to competing businesses.

The experience from the United Nations Conference on the Law of the Sea (UNCLOS) negotiations suggests that the transfer under the Kyoto Protocol will be quite open-ended. Free technology will be considered a matter of right by developing countries. That has serious implications, not the least of which will be reducing the notional return on advancing technology if it must be surrendered at a zero or near zero price.

The possibility of detailed regulations by international bodies is also a troubling matter. The initial assessment and continual monitoring of emissions would have to be developed. If the experience with the UNCLOS is any guide, developing countries would want to control that operation. That, in turn, suggests that economic activities at every level in the United States would be under detailed scrutiny by the functionaries from developing countries.

CONCLUSIONS

There may be a way of doing emissions trading correctly. Jonathan Baert Wiener in "Designing Global Climate Change Policy: Efficient Markets versus Political Markets," published by the Center for the Study of American Business at Washington University in St. Louis suggests such an approach. And two thousand signers of the petition circulated among economists also call for an effective trading system. Such faith in market mechanisms is heartening. However, the emissions trading schemes developed thus far, are government creations heavily laden with regulation.

An international system is unlikely to be better. Indeed, the nature of the international negotiations adds serious impediments to the development of a workable system. Benjamin Zycher in "Market-Based Policies and International Negotiations," published in the Fall, 1997 issue of *Jobs & Capital*, points out that there exists serious monitoring and compliance problems with the Kyoto Protocol. To make matters worse, the Kyoto process has proceeded for so long down the wrong path, it may be too late to reverse course. The American concessions at Kyoto in 1997, after piously posturing against them before the meeting, only suggest a bleaker road ahead.

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