

An Early Action Climate Change Policy for all Countries

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The Problem to be solved

In November 2000, just after the US Presidential elections, negotiators will meet in The Hague at the sixth meeting of the Conference of the Parties (COP6) to the United Nations Framework Convention on Climate Change (UNFCCC). By that date it will have been almost three years since the negotiation of the Kyoto Protocol at COP3, which was held in Kyoto in December 1997. Intense negotiations over the intervening period have focused on how to implement the Kyoto Protocol. The Kyoto Protocol has been signed by 84 countries but not ratified by any of the key countries, nor does it seem to be close, especially in the United States where, the Senate has registered its strong opposition.

Why has it been so difficult to take the next step of implementation? The simple answer is that design of mechanisms within the Kyoto Protocol has generated too much complexity and requires too many new institutional developments to be plausible. The fundamental answer is that the Kyoto Protocol was never going to work because it is the wrong approach to tackling the climate change issue.

The core issue about climate change is how to design a policy response in an environment of considerable uncertainty. There is enough evidence and professional expertise to suggest that climate change could be a serious problem. What is required is an insurance policy against the *possibility* that climate change could be very costly to the planet. The key issue is how much insurance should humanity pay, given the current state of our understanding? The answer is that we don't really know what cost we should pay now. We also don't know by how much nations should reduce carbon dioxide emissions or how quickly.

Nonetheless, the Kyoto Protocol consists of a specific set of targeted reductions in emissions: 5.2% for Annex B countries (essentially OECD economies plus countries of the former Soviet Union) relative to current emissions within the next decade (or more precisely, between 2008 and 2012). The target was set although the negotiators had no way of knowing how costly it will be to attain it. Understandably, therefore, countries are reluctant to implement a policy that could potentially be very costly and where the benefits also are uncertain. Although

there is some important flexibility built into the Protocol to smooth costs across countries, the total cost results from the overall targets.

More importantly, only a subset of countries are part of the agreement and those countries are expected to create new international institutions and laws that can accommodate the various mechanisms at the foundations of the Protocol. The most problematic are international trading of emission permits, which requires a system of monitoring and enforcement that is unlikely to be feasible in the near future; and the Clean Development Mechanism, which requires detailed and costly evaluation of carbon reducing investment proposals in developing countries on a project by project basis.

So what can be done? A number of realistic proposals have been made. One from the Resources for the Future (see Kopp et al (1997, 1999) would place a cap on the prices of emission permits that each nation would issue. This would guarantee that implementation cost of the Protocol would not exceed a given level. An alternative is the McKibbin-Wilcoxon (MW) Proposal from the Brookings Institution (1997a,1997b, 1999), which proposes a fundamental re-thinking of the approach embodied in the Kyoto Protocol, fixed targets and the international trading of emission permits.¹ Both proposals have evolved over time and can be considered as “early action policies,” while countries still attempt to solve the problems with the Kyoto Protocol. This brief lays out the key features and advantages of the MW proposal and its attractiveness as an early action policy.

Basic Features of the MW Proposal

Rather than centralize the process of reducing carbon emissions and creating new international institutions, it is better to coordinate responses across countries (what Richard Cooper of Harvard calls an approach of agreed actions) in an explicit way so that each country would pay the same price for emitting carbon. Furthermore, it is appropriate at this stage to create property rights over emissions of carbon dioxide from burning fossil fuels only. As much as it would be nice to have alternative gases and sinks, as in the Kyoto Protocol, it is an

¹ The MW proposal, in some ways, is similar to the global carbon tax proposal of Professor Uzawa (2000) with the crucial difference being that most of the revenue generated by raising the price of carbon in the MW proposal does not go to the government but is kept within the private sector.

administrative nightmare to deal with them in the near term and adds enormous complexity to the task.² In the future these could likely be added without compromising the system.

The key innovation of the MW proposal is that it would create *two emissions-related assets* and associated markets for both in each country. The two assets are designed to set a long run goal for emissions and to limit the short run costs. Fortunately the two markets also create a mechanism for managing risks associated with climate change policy within each economy so that very little else needs to be done to implement a consistent and simple market-based approach to tackling the climate change issue.

The first asset is an *emission permit*. This certificate would entitle its holder to produce a unit of carbon each year (each permit would have a date stamp and be valid only in the year issued). The second asset is an *emission endowment*, which is a certificate that entitles the holder to an emission permit *every year forever*. The emission endowment is like a government bond that pays a coupon of an emission permit every year. Another way to think about the two assets is that the emission endowment is like stock in a corporation whereas the emission permit is the dividend the corporation pays each year to people who hold the shares. The stock value is the expected value of future dividends.

There is a critical difference between the two asset markets. The endowment market would be one in which the supply of carbon is fixed (the goal of policy) but the price is flexible. The government cannot issue more endowments after the initial allocation but can buy back endowments in future years if the target for emissions is to be tightened. Because the endowment is the perpetual lived asset, its price will reflect the expected future price of emission permits in each year (analogously to the stock price and the dividends of a company).

We treat the market for emission permits – where the price is fixed, but the output of carbon is variable -- quite differently because the permit market is directly related to the short run cost of carbon. Every ten years there would be a negotiation between all countries in which the price for emission permits is agreed to and fixed for ten years. The price of permits would be fixed in each economy by governments selling additional permits into the market after the permits generated by the endowments have been fully utilized. Thus a producer that wants to

² A cynic might think that, although a good theoretical case can be made for including multiple gases and sinks in a comprehensive policy, they were actually included to kill the Kyoto Protocol because of the impracticalities of including them both through the imprecision of current techniques of monitoring them or the high transactions cost of doing so.

produce a unit of carbon for domestic use can get a permit in a given year by either having an existing emission endowment, purchasing an emission endowment in the endowment market (this would be sold by another private holder of an endowment), or purchasing an emission permit in the permit market that is either supplied by a private owner of a permit or from the government.

We propose that the initial price of the annual permits – which would determine the marginal cost of emitting carbon -- be set at \$US10 per ton of carbon (in 1990 dollars). The price would be the same in all markets in all participating countries, and thus the cost of removing carbon at the margin in each economy would be identical in the short run. No complicated system of international trading in permits or global monitoring would be required – addressing a central flaw in the current Kyoto Protocol. Moreover, the value of permits in the United States would not depend on how permits are generated in other countries.

In contrast, the price of endowments would be flexible, reflecting the outcome of market forces, the period of fixed permit prices in the near future, as well as the expectations of private actors as to what is likely to happen after the current negotiation period. Industry and consumers would be expected to respond to both the short run price signals (which are known for ten year periods) as well as the long run price signals (which are market determined) in making spending and investment decisions.

The purpose of separating the endowment market from the emissions market is to ensure that, over the long run, emissions do not exceed a given limit. The annual emissions permitting process cannot accomplish this objective since it operates on the basis of a fixed price (the emissions fee), not a fixed quantity.

The initial allocation of endowments would be up to each government. We propose giving a significant portion to fossil fuel industries as compensation to shareholders for the capital losses of significant structural change that will result from raising carbon prices and to galvanize support for the policy. We also would allocate a portion to every person in the economy. The initial allocation of endowments will create a natural constituency supporting climate change policies because the value of the endowments in future years will depend on the commitment of the government to pursue sound environmental policies. This would create a mechanism for enforcement of the agreement that is internal to each country.

How Can Developing Countries Be Induced To Participate?

It is important to distinguish between Annex B countries and developing countries. Failure to do so would unduly inhibit the growth of the developing world and would not attract their support for a global system that is absolutely crucial for a successful policy.

Accordingly, it is appropriate in the case of Annex B countries to use the Kyoto targets as the endowment allocation within each economy. For developing countries, however, it is only reasonable to allow endowments far in excess of current requirements (the precise levels being subject to international negotiation). With endowments greater than requirements for permits over the next several decades, the price of permits in these countries would be zero, and thus there also would be no short run costs. In contrast, the price of endowments in developing economies would be positive, since the price would reflect the expected future price of permits. Thus a price signal can be introduced to the developing world that will affect current investment plans without entailing short run costs.

A developing country can therefore begin to contribute to a reduction in emissions with a firm commitment in the form of endowments. This reduction will be realized, however, only when emissions actually bump up against the endowment limit. The faster a country's economy grows, and thus the faster pace at which emissions are growing, the more rapidly the endowment constraint will become binding.

Meanwhile, carbon intensive industry will have fewer incentives to shift from Annex B countries into developing countries in order to avoid the carbon charge in industrial countries because they would need to consider the fact that all countries will be participating in the overall emissions reduction program (of which endowments would play an important role). The differential endowment system – one for first world countries, another for developing countries – also would have the added benefit of factoring in the cost of emissions in decisions by foreign private investors when deciding whether to commit funds to developing countries.

Overall, the nationally based emissions permit and endowment program is far more appealing than the Kyoto Protocol. All institutions are created and managed within each economy. Breakdowns in the infrastructure of any given market will not spill over to markets in other countries. To be sure, there would be fluctuations in the amount of global emissions, but the critical result is that the variations would be around a downward trend. Furthermore,

decentralizing responsibility for taking action to individual countries would make the whole program more sustainable than the Kyoto alternative, which requires participation by all countries in an international permit trading regime.

Another advantage of the approach proposed here is that the negotiation every decade on the permit price allows a great deal of flexibility. Monitoring of emissions and the extent of induced abatement activities can be undertaken more easily than in a global program. If information changes then the price of permits can be changed by international agreement. The endowment market will reflect this information immediately and will enable more rapid but cost minimizing adjustment if required.

An Early Action Proposal

Finally, the permit and endowment approach can and should be easily implemented in the United States and all other countries as an early action policy. By establishing such a system with a low initial price for permits, all domestic institutions that would be required if the Kyoto Protocol would be created in the meantime. To move from the fixed price system that we propose to a flexible price system under the Kyoto Protocol, all that is required is to remove the government intervention from the permit market in 2008 and allow international trading of the permits then. Alternatively, and more likely, countries that implement the MW proposal would find that it works so well in providing price signals to consumers and industry that there will be no need to move to the Kyoto Style system over coming years.

Summary

The key objective for those interested in promoting responsible climate change policy is to allow each country runs its program – without depending on other countries – but within an overall framework that provides constructive incentives for private actors to control emissions in an efficient manner. The proposal outlined here would accomplish this objective, ensuring sufficient flexibility for private actors, providing incentives for developing countries to commit to the system, and creating constituencies within all countries to sustain the agreement – all without the need for cross border intervention.

Finally, raising the price of carbon by a known amount in the short run would establish the insurance premium to be paid for climate change prevention over coming year, while

reducing the short run uncertainty for investment planning and creating a market that accurately prices carbon emissions for long run planning purposes. Credible price signals can guarantee that emissions of carbon will be lower than otherwise would have been the case. Perhaps emissions won't be low enough as time proceeds and we get better information and improved climate science, but a flexible system of emissions reduction can deal with this over time. Starting with small, but significant action now is far better than continuing to argue over the Kyoto Protocol and failing to implement policies that could make a meaningful start toward emissions reduction. The current situation generates enormous uncertainty for investment decisions and compounds the cost of climate change.

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Key elements of the McKibbin Wilcoxon Proposal

All countries create two assets:

- an *emission permit* which is required by fossil fuel industries to supply a unit of carbon annually;
- an *emission endowment* which gives the owner an emission permit every year forever.

All countries create two domestic markets:

- a domestic *emission permit* trading system with a fixed price of \$US10 per ton of carbon in Annex I countries and a cap price of \$US10 in non-Annex I countries;
- a domestic *emission endowment* trading system with a flexible price.

In 2000, all countries are allowed to make a one off allocation of emission endowments domestically based on Kyoto targets for Annex I countries and current emissions plus x% for non-Annex I countries. Trading in both markets begins in January 2001.

Permits must be reconciled against production or imports of carbon at an annual basis at the top of the carbon production chain – coal mines, oil refineries, gas refiners. Production that is exported is exempted.

Every decade there is a meeting of the Conference of the Parties to the UNFCCC to evaluate the extent of abatement and the climate science and to negotiate a new price for permits.

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