



A New Currency

Climate Change and Carbon Credits

A new currency is emerging in world markets. Unlike the dollars, euros and yen that trade for tangible goods and human services, this new money exchanges for pollution—particularly emissions of carbon dioxide, which are caused by burning fossil fuels and are the leading cause of global climate change. Carbon credits, as they are called, are poised to transform the world energy system and thus the world economy.

But it is not easy. As the Europeans have shown with their successful launch of the euro, new monetary systems require sophisticated and strong institutions. Creating a new currency for global trade is doubly difficult. Not only are global institutions much weaker than national courts and treasuries, but international cooperation is vulnerable to defection. Rarely do all major nations move in lockstep, but the creation of a new global currency implies the need for coordination on a scale that is unprecedented in the history of international environmental law.

How this currency evolves and its implications for the world economy depend on decisions that are being made today and in the next few years. Those who want this system to work—and if it does, the benefits to the atmosphere and to the world economy could be enormous—must look to the right lessons from history. Yet the wrong histories have served to inspire most of the international diplomacy in this area. Governments have sought grand global treaties, such as the Kyoto Protocol, yet in history the most demanding and effective treaties and strongest currencies have emerged “bottom up” from the initial efforts of a committed few.

Previous Efforts against Global Warming

In its simplest form, the physical cause of climate change is not disputed. The atmosphere naturally contains greenhouse gases such as water vapor, carbon dioxide and methane. Absent these gases, the planet would cool to a subzero frozen ball, much as the desert cools rapidly on a cloudless night. When humans pump extra quantities of these heat-trapping gases into the atmosphere, we alter the energy balance of the planet and cause a change in climate. It is clear that the concentrations of these greenhouse gases have greatly risen since the industrial revolution, that average global temperature is higher, and that temperatures will climb still further if we do not alter our path.

A gradual warming is likely to cause rising sea levels; more extreme weather events are also possible. Much less likely, but highly worrying, are abrupt changes such as a rapid shift in the North Atlantic ocean circulation—an event that could, ironically, put much of the far North into a deep freeze.

Devising effective solutions to the problem is difficult because climate change is both global and long-term. Greenhouse gases are stock pollutants with long lifetimes. What matters is their concentration in the atmosphere, not the exact geographical location where they are emitted. This characteristic of greenhouse gases enables the targeting of the least costly places for controlling emissions wherever they may be on the planet, but also the danger that laxity in one location

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can undo even the best efforts elsewhere. And unlike local pollution problems that have been the mainstay of environmental regulation, the benefits of controlling greenhouse gases accrue over many generations because greenhouse gases are long-lived in the atmosphere—carbon dioxide remains in the atmosphere for about a century.

During the late 1980s climate change rose to prominence in the United States and other advanced industrialized countries. At the 1992 “Earth Summit” in Brazil, the United States signed the United Nations Framework Convention on Climate Change, which created a framework for international cooperation on climate change. For the United States and industrialized countries, compliance has meant submitting reports on emissions of greenhouse gases and contributing to a fund that compensates developing countries for the “agreed incremental cost” of their efforts to comply with the Convention’s goals. The Convention also requires all countries to try to reduce their emissions and contains elliptical language that seemed to require industrialized countries to reduce their emissions to 1990 levels by the year 2000. Very few met that goal, and the steepest reductions resulted from events unrelated to climate policy—Germany, for example, attained lower emissions by absorbing East Germany and shutting the most inefficient legacies of central planning.

Most governments, including the administration of US President Bill Clinton, viewed the Convention’s commitments to control emissions as woefully inadequate. In 1995, Clinton launched a diplomatic process to strengthen the Convention, culminating in the 1997 Kyoto Protocol. Kyoto set targets for the total quantity of greenhouse gases that industrialized countries would be allowed to emit during a specific “budget period” of 2008-2012. The Protocol gave countries flexibility to meet their commitments by prescribing a worldwide system of tradable emission credits, modeled on the successful experience with trading air pollution credits in the United States. Kyoto imposed no targets and timetables for emissions from developing countries. However, a scheme known as the “Clean Development Mechanism (CDM),” would award valuable emission credits for carbon abating investments in developing countries.

But Kyoto is in trouble. The United States withdrew in 2001 mainly because it could not comply with the

Kyoto strictures. By the late 1990s, US emissions were 17 percent above 1990 levels; cutting them to 7 percent below 1990 (as Kyoto required) was impossible. Buying emission credits from overseas would make compliance easier, but only Russia and Ukraine had large surpluses—windfalls resulting from bargaining in Kyoto and the collapse of their respective economies. Neither the US Congress nor the US citizens would countenance ratifying a treaty that created a giant shell game for sending dollars to Russia in return for bogus credits just so that they could comply on paper with a treaty.

With the United States out, Kyoto cannot enter into force unless Russia ratifies the agreement. But since Russia’s surplus is nearly worthless without the United States to buy the excess, Russia may not ratify. The keys to Kyoto’s success as a treaty depend, ironically, on the country that cares least about global warming. Most studies show that Russia actually benefits from a bit of warming—higher temperatures and longer growing seasons would be a bonanza for the grain-growing heartland. Global warming, according to Russian President Vladimir Putin, would allow people to “spend less money on fur coats and other warm things.”

The real news is not Kyoto’s barely audible heartbeat. Instead, efforts to slow global warming are beginning to take shape as the governments and firms that are serious about the climate problem struggle to kick the carbon habit. The efforts to watch are in Europe, where public concern about global warming is greatest in the industrialized world.



Opposite: The large cooling towers of a state-owned steel mill loom over a Beijing junction, contributing to the pollution in many Chinese cities. **Above:** Visitors to St. Peter’s Square in the Vatican arrive on bicycles during a Sunday when cars were banned, organized in 100 Italian city centers in February 2004 to fight pollution.

European Emission Trading Systems

The European Union has undertaken several policy responses to climate change over the past decade, including voluntary and mandatory regulations to control emissions from transportation, buildings and small industrial sources. Two countries—the United Kingdom and Denmark—went further and created emission trading systems, in 2002 and 2000 respectively. Today, the lessons from those early experiences have been folded into a European Emission Trading System (ETS) that is set to begin in 2005 and will cover all major industrialized sources. The European governments are trying to find a fair and politically durable way to hand out the emission credits that will be worth as much as US \$1 trillion—not an easy task, but a key prerequisite to trading.

allowing the market to flood with cheap Russian credits? In Europe, real firms are spending real money to meet the emission control obligations, and they will not tolerate a scheme that undercuts their efforts with meaningless Russian credits. The same logic explains why the architects of the euro did not let any nation join—real governments were required to make real efforts (with measurable success) in controlling their deficits and public debt. If one government failed then all the rest would pay the price with a less valuable euro.

Therein lies the tension in creating an effective response to the dangers of climate change. The long-term and global nature of the problem argues for a global response—this provides the greatest leverage over the problem and the largest zone for gains from trade. On the other hand, the

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Markets are emerging in other countries as well, though none is as active and credible as the EU ETS. The Chicago Climate Exchange (CCX) opened in December 2003 for trading between 19 North American entities who have agreed to reduce their emissions one percent per year over four years. For now, prices outside the Eurozone are severely depressed—CCX credits trade for barely one US dollar.

Low prices are partly due to the lack of any credible limits on emissions in the United States. But another cause is Kyoto itself. Insofar as markets take the existence of Kyoto as a possible starting point for action they worry about the vast surpluses sitting in Russia and Ukraine. Prices in Europe are much higher (forward trades brokered by Evolution Markets have come in between 5.5 and 9 tons CO₂) because the ETS has a wall around it. Participants in the scheme are allowed to trade outside the European Union up until the point where the volume of these trades equals 6 percent of the total amount of credits issued. Most participants expect that review would limit outside trading, and the uncertainty of that outcome has devalued efforts outside the Eurozone.

Europe's wall is not an oddity, but proof that no economic zone will create a new currency without implementing its own systems for central banking, accounting and exchange. Carbon trading is no different. Countries that care most about climate change are forming their own trading systems (currencies) and creating their own institutions. Portals (exchanges) between the systems will arise under tight rules so countries can control their exposure to weak currencies.

Why is the European Union not taking the much less costly path to complying with its Kyoto commitments by

countries that have the greatest opportunity for low cost emission controls—developing countries as well as Russia and Ukraine—are those that have the weakest internal institutions and thus are least likely to be able to monitor and enforce the system. Their participation degrades confidence and value in the currency; they are allowed to print currency and, as economist Sir Thomas Gresham predicted, drive out bona fide emission reductions with bogus credits.

This emerging market for carbon contrasts with most experience and thinking in international environmental law, which has emphasized the need for international accords that are implemented “top down.” Leading the canon of environmental examples is the Montreal Protocol on Substances that Deplete the Ozone Layer—an effective agreement that mostly worked because ozone-depleting substances are largely peripheral to the economy and substitutes emerged quickly at a low cost. Carbon is different because the costs will be larger due to carbon's centrality to the world economy, and the pace at which new technologies will arise and can be diffused into practice will be much more uncertain.

We should look to relevant spheres of international cooperation other than the environment for examples and models—especially in the areas of trade and finance that, like regulation of carbon, affect the very core of modern economies. Consider, for example, the origins of the World Trade Organization (WTO). The WTO is a result of 50 years of negotiations that began as an agreement between a small group of like-minded countries beginning with the United States and Britain and its colonies. After World War II these countries followed a grand ambition—the creation

of a new UN body that would regulate international trade, the International Trade Organization (ITO). In the interim, they created the General Agreement on Tariffs and Trade (GATT) to achieve immediate reductions in tariffs between friendly nations to avoid repeating the protectionism that deepened the postwar depression of the 1930s. The result was that the vision failed—branded as too ambitious by the US Congress—leaving only GATT behind. The parallel with Kyoto is eerie. The vision is failing, but what is left behind is more important—serious but smaller efforts that can knit together, over time, into a larger multilateral effort. Similar examples of “bottom up” regime formation can be seen in the development of the European Common Market.

Of course, these histories are not perfect precedents. It was relatively easy to develop GATT because tariff concessions and the “most favored nation” rule are self-enforcing. Concessions to one party automatically apply to all others; it is easy to identify and punish those who fail to comply. Globally mixed pollutants are harder to measure, and it is hard to focus penalties on those who pump out too much greenhouse gases. However, the emerging carbon currency can help. The zones that create the first, strong currencies can regulate access to their markets to protect the value of this new asset—as more members accept the accounting strictures and create the institutions needed to gain access to those large markets (initially most likely the European Union’s ETS, but eventually the United States and others) the system will grow.

So What Next?

For those keen to slow global warming, the most effective actions are in the creation of strong national carbon currencies. Such efforts do not need to be coordinated through international action; international coordination is likely to slow and divert truly effective action. As in Kyoto, it is likely to create untenable policy outcomes that are acceptable to the least interested actors—Russia today, but key developing countries in the future. Rather, create a strong currency in key zones and then create portals to other zones.

The European experience will likely be the backbone of these national programs, but the European system could fail. Particularly troubling is that the allocation of these permits have been left to member states with little guidance on how

to execute this task. Political support for the program could unravel as the losers in this system squawk. Also, there is the risk that the trading system could become tied in red tape if regulators decide to scrutinize trades individually, rather than let the market work. One of the earliest US efforts at pollution trading—the 1977 Clean Air Act Amendments—largely failed because of regulatory suffocation.

For scholars and policymakers, the key task is to mine history for guides that are more useful. Global warming is considered an environmental issue, but its best solutions are not to be found in the canon of environmental law. Carbon’s



Hundreds of tricycles block a major intersection in Manila in January 2003 during a protest against the phaseout of the vehicles under the 1999 Clean Air Act Law, which aims to control worsening air pollution in the Philippines.

ubiquity in the world economy demands that cost be a consideration in any regime to limit emissions. Indeed, emissions trading has been anointed king because it is the most responsive to cost. And since trading emissions for carbon is more akin to trading currency than eliminating a pollutant, policymakers should be looking at trade and finance with an eye to how carbon markets should be governed. We must anticipate the policy challenges that will arise as this bottom-up system emerges, including the governance of seams between each of the nascent trading systems, liability rules for bogus permits, and judicial cooperation.

As the evolution of several international trade regimes show, these obstacles are not insurmountable. But they will take time. And after seven years of spinning wheels and wrong analogies, the international regime to control carbon is headed, albeit tentatively, down a productive path. ■

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