Seizing the Opportunity:

Using International Trade Regulations to Combat Climate Change

January 10, 2008

Ben Carliner, Maya Perl-Kot, Riki Swanson and Clyde Prestowitz

Economic Strategy Institute
For too long, many American business and political leaders have fought a holding action against committing the United States to serious efforts to control global climate change and reducing greenhouse gas emissions. That their doubts about the veracity of climate change science and the role of human activity as the cause of climate change have now been disproved is of little comfort, because the delay in addressing this serious challenge has left the US ill-prepared to set the global agenda for regulating greenhouse gas emissions. The climate change deniers, though now cowed, have done serious damage to the long term economic and political influence of the US, as other countries have moved ahead with new policies and regulations that could set the terms of future mitigation efforts in ways that undermine US economic strength and international influence.

As the US dithered, the rest of the world moved ahead with a variety of regulatory efforts to mitigate climate change. While many of these efforts, most notably the Kyoto Protocol, were severely flawed, much progress has been made in laying the groundwork for efforts to reduce greenhouse gas emissions through the use of carbon taxes and cap and trade emissions schemes. Moreover, attention is being increasingly turned to issues of enforcement. One of the fatal flaws of Kyoto was that neither the United States nor the leading emerging market economies were party to the agreement. But market access can be a powerful inducement to change. Thus, policy makers in the EU and elsewhere are realizing that international trade regulations can be used to enforce environmental rules - even in countries not bound by existing environmental rules or treaties. Exporters who depend on foreign markets can be forced to meet tough new regulations. The time and study put into these labors has put the EU in the driver’s seat in terms of setting the agenda for future mitigation efforts. The US - and particularly US businesses - risk being forced to adapt and comply with regulations which they had no part in devising and they risk being left behind as new technologies transform new products and production techniques.

Dealing with climate change is thus a critical priority for the US. Not only are the environmental consequences of inaction dire, but the long term economic and regulatory consequences of not proactively responding to climate change are even more pressing. If the US does not act, it will cede to the EU the role of setting global standards and regulations. More to the point, US policy makers need to recognize that, because of the size and strength of US markets, the US is in fact in a strong position to impose emissions regulations that will be
adopted the world over. The way to do this is by using trade measures to force exporters to reduce their emissions if they wish to sell their goods and services in the US.

Economists and trade policy experts have long been skeptical of allowing environmental considerations to interfere with international trade because they worried that protectionist lobbies would use environmental measures to unfairly target their competitors and thus distort market mechanisms. As a result, several principles enshrined in World Trade Organization law, like most favored nation treatment or the rules governing production process methods, seem to rule out certain types of environmental protection because of the negative effects on international trade they could cause. But while there is some concern that WTO rules will limit the options open to US policy makers, in fact the WTO has left open a wide set of policy options to regulate international pollution. The WTO explicitly allows for protecting the global commons, and there is a growing body of case law that says environmental protections do not conflict with trade rules - so long as they are applied universally and are not designed to protect domestic industries.

Most countries have some form of environmental regulations in place, but until recently these rules have not seriously impacted international trade and investment. However, many countries are signing on to multilateral environmental agreements that prohibit the use of environmentally damaging substances, set up carbon trading schemes, or protect wildlife from harm. Thus far, major MEAs have been negotiated outside the confines of the WTO.

While some aspects of WTO law have been cited as posing obstacles to MEAs, the WTO does contain specific provisions that allow for environmental regulations. Both the preamble to the WTO agreement and two important articles in the original GATT declaration (Articles XX(b) and (g)) explicitly allow efforts to promote sustainable development and protection of the environment.

The point here is that WTO rules need not stand in the way of concerted efforts to limit the use of greenhouse gases. Indeed, many WTO rules could serve to make environmental protections more effective by ensuring that such protections are universally applied around the globe. Allowing major developed or industrializing nations to opt out of environmental restrictions, as Kyoto does, will fail to combat climate change and could also lead to disruptive economic changes as polluting industries are confronted with incentives to move to jurisdictions with little or no environmental legislation.
Therefore taxes and other trade measures can and should be undertaken to encourage other countries to restrict emissions of greenhouse gases, and to lay the groundwork for an enforcement mechanism that would allow new international environmental agreements to function smoothly. Indeed, trade measures may prove to be the only effective way of ensuring broad international compliance with emissions regulations.

In particular, attention must be paid to the fact that any remedy - be it carbon taxes, cap and trade systems, or other measures - must be applied universally, without discriminating against international producers or favoring domestic ones. One important finding of this study is that any emissions permits issued under a cap and trade system must be auctioned off, rather than allocated, in order to conform to WTO rules that prohibit subsidies. Still, WTO rules and regulations should not be seen as a hindrance to efforts to introducing environmental regulations. They leave upon a wide range of policy tools with which individual countries can take steps to limit their own GHG emissions and those associated with the imports they purchase.

The key to implementing effective and efficient policies to combat global warming lies in effectively using WTO rules and regulatory procedures to support and accelerate the effort to reduce global greenhouse gas emissions. While a negotiated international agreement governing GHG emissions may be the most principled means of combating climate change, the diplomatic and political difficulties involved in crafting such an accord means that any far-reaching international agreement is likely many years in the future. But that does not mean we are without other tools to deal with climate change. In particular, we believe that international trade rules provide some of the most effective and efficient means with which to move forward with climate change mitigation.

This paper will examine some of the underlying legal issues and precedents shaping the relationship between the international trade regime and new efforts to combat climate change, and suggest some recommendations to move forward. We will pay close attention to the legal landscape surrounding the implementation of domestic environmental rules on imports, with an eye to explaining the ramifications of these rules on climate change efforts. We hope that the results of our study will provide a road map for policy makers working on emissions regulations and lead to effective domestic measures in the US to combat climate change that will encourage exporters in other jurisdictions to produce goods and services with a minimum of GHG emissions. The U.S. can still provide global leadership on the issue of climate change, but time is of the essence. If the U.S. does not act now, we will cede first mover advantage to European regulators.
Climate Change: What’s the Problem?

Climate change is being caused by huge increases in the atmospheric concentrations of Green-House Gasses (GHG), which have been put there by human economic activity around the globe. The NOAA State of the Climate 2005 report found that the majority of the top 10 warmest years on record have occurred in the past decade: lower-tropospheric temperatures have climbed to 1.3°C above the 1979-98 mean in the northern pole regions, sea-levels have begun to rise, and 2005 saw a record number of tropical storms - 27 named storms (15 hurricanes), with some of the costliest (Hurricane Katrina), lowest in atmospheric pressure (882 HectoPascal during Hurricane Wilma), and most devastating in terms of loss of human life (Hurricane Stan).

Though global temperatures and climate have fluctuated in the past, for example during periods such as the end of the last ice-age and the retreat of the glaciers, never before has the impact of human intervention on the environment been of such a magnitude as in the past 200 years. Agricultural activity, deforestation, industrial activity and transportation have all had a major impact on the atmosphere. Ice cores drilled in Greenland and Antarctica have typically shown CO₂ concentrations ranging from 190 parts per million (ppm) during the ice-ages to 280 ppm during the warmer interglacial periods like the present one (which began around 10,000 years ago). But by 1958, concentration levels were 315 ppm, and today they stand at 378 ppm and are rising at a rate of 1.5 ppm/year. In the case of methane, associated mainly with cattle-grazing and deforestation, the disparity is even more acute and current atmospheric levels of the gas are higher than they have been in 400,000 years.

The Intergovernmental Panel on Climate Change (IPCC), the most widely recognized authority on climate change science and analysis, recently released its 2007 Fourth Assessment Report, with input from more than 1,200 scientific authors and 2500 additional reviewers. According to the IPCC model, which differentiated between a baseline business-as-usual approach and six other scenarios of partial or intensive pollution abatement, temperatures are expected to rise between 1.1°C and 6.4°C by the end of the century. The Greenland and West Antarctic ice sheets face substantial melting, contributing to a rise of 4 to 6 meters in sea-levels, which would result in the inundation of many coastal zones, including several of the world’s largest metropolitan areas. Drought-stricken regions will see more severe conditions as well as an addition in drought-affected land area. Communities that traditionally derive their water from glaciers and snow-covers can expect their water resources to decline, while also experiencing earlier peak runoff in springtime, more flash-floods (in Northern, Central and Eastern Europe) and rockslide risks (in the Himalaya mountain range). As a result of these water supply and precipitation modifications, arid regions that can currently sustain marginal agricultural activity will likely be transformed into agriculturally inhospitable land. Sub-Saharan African will experience severe food shortages and the Western United States may find its farming industry paralyzed.

---

Finally, the effects on animal and plant life, with much less sophisticated adaptability capabilities than humans, will be ruinous. Up to 30% of all animal and plant species may face extinction by the end of the century if temperatures continue to increase according to the baseline projection. Migration and reproductive habits will continue to change and influence the livelihoods of millions of people. Already, since spring has been arriving earlier in the past decade, the egg-laying and migration cycle patterns of fish and birds in the Northern Hemisphere have changed and disease spreading mosquitoes have shifted their ranges to higher latitudes, which previously have been too cold a habitat for their survival.

The effects on humans from these myriad changes in their surroundings could take several directions. Disruptions of traditional economic and agricultural activity could trigger large human migrations as people leave newly inhospitable areas or sea level rises force the evacuation of coastal zones and low lying islands. Climate refugees could impose large costs on both their host and source countries as they move to seek new opportunities or flee environmental catastrophes.

The Stern Review on the Economics of Climate Change, released in 2006 by British economist Nicholas Stern, has found that the future costs of doing nothing now to combat climate change are enormous. It finds that, if ongoing GHG emissions are not reduced, “the cost of climate change will be the equivalent of a 20% in per-capita consumption, now and forever”, and that “the costs of climate change will be equivalent to 5% of the total GDP each year, now and forever... if a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more...”\(^5\) The figures that arise from the Review’s assumptions approximate around $311 per ton of carbon. While Stern’s figures are not equivocal, his study is the most detailed and empirically rigorous effort to assess the costs of climate change to date and points to the urgency of proactive measures to address GHG emissions immediately\(^6\).

These findings are not just a cause for concern, they are a wake up call for governments and international institutions to begin to deal with the problem of climate change and plan for solutions that will lessen the economic impact and safeguard the environment for future generations. The scientific debate has largely shifted from proving the existence of global warming to putting a price on pollution and devising strategies to reduce global emissions of GHG. GHG emissions are characterized by a ‘tragedy of the commons’ problem. The benefits of economic activity that release GHG’s into the atmosphere are felt by individuals, but the costs are spread widely over the entire population and the costs of GHG emissions are not captured by the prices consumers pay for goods and services. In order to correct this problem, a mechanism must be found for passing these costs along to the producers of carbon emission, and ultimately the consumers who buy their products and services. Efforts to pass these costs along, however, could run into problems with existing rules governing international trade.

---

\(^5\) Stern, Nicholas et al. The Stern Review on the Economics of Climate Chang: Executive Summary. Her Majesty’s Treasury, October 2006. [http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)

Climate Change Requires an International Solution that is Consistent with the Principles of the WTO

The World Trade Organization

The World Trade Organization replaced the GATT agreement on January 1, 1995 and dramatically lowered tariffs and trade barriers among its member nations. But while the overarching goal of the WTO and the GATT before it was to liberalize trade, the preamble to the WTO explicitly acknowledged the importance of environmental protections and sustainable development. Indeed, WTO members agreed that “their relations in the field of trade and economic endeavor should be conducted with a view to raising standards of living … while allowing for the optimal use of the world’s resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development.”

In 1994 the Committee on Trade and Environment (CTE) within the WTO was set up by the Marrakesh Ministerial Decision on Trade and Environment. The CTE is playing a major role in the Doha Round of trade negotiations within the WTO with a special responsibility for coordinating the negotiations as they relate to trade and sustainable development. The CTE was given a mandate to:

(a) Assess the connections and evolving relationship between trade and environmental measures, all the while minding the “sustainable development” principle embedded within the WTO preamble.
(b) Make recommendations on alterations to the provisions of the trade agreement needed to maintain its overall sustainable-character promise.
(c) Ensure that while environmental protections and sustainable development are pursued, protectionist policies and unnecessary barriers to trade aren’t disguised as environmental regulation.

Specific provisions have also been made (for example in Article XX(b) and XX(g) of the original GATT declaration) to allow for specific situations where the protection of the environment allows for certain limitations on trade. Further complimentary agreements, such as the SPS and TBT, not only recognize environmental problems in broad language, but also establish specific obligatory environmental standards that all WTO members must adhere to. The SPS (The Agreement on the Application of Sanitary and Phytosanitary Measures) sets a framework for nations to protect both human, animal and plant health through international trade regulations; while the TBT (Agreement on Technical Barriers to Trade) leaves regulatory measures to provide adequate technological levels and labeling of products at the discretion of nations.

---

7 World Trade Organization Website. Items on the CTE’s Work Programme. http://www.wto.org/English/tratop_e/envir_e/cte00_e.htm
8 Despite its authority, the committee has yet to execute this power in its 12 years of existence.
The WTO thus allows, and even encourages, a broad range of environmental protections and rules to be enacted by its member states. The only condition is that such rules do not discriminate between domestic and international producers. The principle of non-discrimination is thus the single most important rule that domestic environmental laws or MEA’s need to meet in order to keep the WTO happy.

**The Kyoto Protocol**

Though the Kyoto Protocol did come into force in 2005, the fact that it is non-binding for the US and the majority of the developing world leaves it a flawed agreement that is unlikely to either achieve its goals are solve the climate change problem. Going forward, the primary challenge is to broaden the number of countries participating in international efforts to reduce greenhouse gas emissions. One way this could be achieved is by conditioning the economic benefits associated with membership in the WTO on active participation and enforcement of reduction commitments.

The European Union, for instance, agreed to endorse Russia for WTO membership only once President Vladimir Putin committed to signing the Kyoto Protocol, thus providing the final signature needed to bring the agreement into force. This was a difficult trick to pull off, as Russia has vast petroleum and natural gas reserves, and much of its recent economic growth has been contingent on these industries. But because Kyoto uses 1990 as the baseline year with which to measure emissions reductions, Russia, which lost large portions of its pollution-intensive industry due to the collapse of its centrally planned economy in the early 90’s, had little trouble achieving its declared targets. So even though Russian industry was very apprehensive about joining Kyoto, the country finally agreed to sign up, both because meeting its obligations was made relatively easy and because of its desire to gain the EU endorsement of its WTO application. Russia could thus provide a template for future attempts to bring other developing nations to the negotiating table for new MEAs or an extension of the Kyoto Protocol.

An older example of conditionality can be found in Korea’s initial noncompliance with the Montreal Protocol on Ozone Depleting Substances (ODS). The Montreal Protocol was designed to phase out the production of ODS across the world and was initially greeted with hostility in Korea. At first, Korea increased its ODS production capacity from 36% of domestic demand in 1989 to 53% in 1990, and was well on the way to self-sufficiency. The Montreal Protocol, however, instituted provisions that prohibited participants from engaging in trade of ODS, or products produced while using ODS, with non-signatory countries (without taking a stance on conflicts resulting from dual membership in the GATT). Korea, which wasn’t a GATT member at the time and in 1989 had an export market valued at $13.5 billion, eventually acceded to the Protocol in 1992, banned imports of chlorofluorocarbons (CFC), and phased out domestic capacity of Annex A substances (CFC and other, most detrimental, materials) by 69% between 1992-2001. Since it wasn’t

---


11 Whang, Jintaek and Lee, Jae-Hyup. *Identifying Complementary Measures to Ensure the Maximum Realization of Benefits from the Liberalization of Trade in Environmental Goods and Services: Case Study on Korea*. OECD Trade and the
protected under the GATT mechanism, Korea couldn’t bring forward any complaint regarding discrimination against its products.

These examples represent two different approaches of convincing recalcitrant countries to accede to foreign or international environmental policies. Annex-I countries in the WTO could similarly utilize similar strategies to get developing nations to comply with new or existing international environmental targets. Since most developing countries rely on exports to the developed world, the gains associated with market access could prove to have significant leverage in convincing developing countries to accede to environmental controls.

**Using the WTO to Encourage Environmental Protection**

For a long time, protection of the environment was considered strictly a national matter and economists were suspicious of regulations dealing with trade and the environment on the grounds that such regulations were mostly facades for protection that interfered with the efficiencies and welfare gains stemming from comparative advantage. As a result it was the United Nations rather than the WTO in which the issue of the global commons and international environmental protection was first addressed. Over time, these concerns have turned into well over 230 MEAs. These MEAs, however, have come into legal conflict with international trade rules, particularly in the use of trade measures as a means of enforcing environmental treaties.

These MEAs cover a wide array of environmental and sustainable development issues. The 1973 Convention on International Trade in Endangered Species (CITES) specifically bans or limits trade in ivory and other items closely related to endangered species. The 1985 Montreal Protocol and the 1989 Basel Convention on Transboundary Movement of Hazardous Wastes regulate production and trade in Ozone Depleting Substances (ODS) and hazardous wastes. These not only establish strong precedents for using trade measures to protect the environment, but the fact that they have sometimes been adjudicated in the WTO provides the basis for using that body as an enforcer.

This merger of environmental and trade concerns proceeded further with the Rio Declaration of 1992 and the founding of the CTE within the WTO mechanism in 1994. Rio expresses the responsibility of states to protect not only their own environment, but that of the globe as a whole. At the same time, however, it specifically states that environmental measures should not unjustifiably restrict international trade and holds that environmental policies should promote the internalization of environmental costs. In other words, the polluter should pay regardless of where he is. By the same token, the WTO founding documents hold that prices for tradable goods should include the costs of environmental externalities.

http://www.oecd.org/dataoecd/19/33/37324555.pdf
One of the big emerging issues has been what kind of trade measures may be legitimate. For a long time, it was held that trade of particular items might be regulated where necessary to achieve the purposes of treaties like the Montreal Protocol. But it was generally regarded as inappropriate for any such trade regulations to deal with the processes by which a product or commodity was produced. Recent cases at the WTO, however, suggest that a different approach is evolving - one that may clear the way for production processes to be considered a determining factor of how a product is regulated.

As mentioned previously, it is the role of government to protect and promote its values and interests, from public health to national security. The WTO has also, of course, instituted legal provisions and other declarations in order to reconcile its goals of trade liberalization with broader societal issues that have global impact, in this case the environment.

These provisions refer, mainly, to GATT Article XX. It is anticipated that where Kyoto and the WTO will come into conflict is when a country bans or places a higher tariff on goods that are produced in a certain manner compared with like goods produced in an environmentally responsible way. For example, a country might ban or impose tariffs on imports of steel because it is produced in factories that do not meet the environmental standards necessary under Kyoto. To be WTO compliant, the country in question would have to claim that the restriction on international trade was allowed under the so-called Article XX exception. This exception must meet a two-pronged test: it must fit one of the 10 exceptions listed in Article XX, and it must meet the requirements of the chapeau to Article XX. There are two exceptions under which environmental measures could fall, XX(b) and XX(g).

Under XX(b), the measure at issue must be enacted to protect the life or health of humans, plants, or animals, and must be necessary to fulfill the country’s policy objective. While the first prong is relatively straightforward - the reduction of GHGs will provide a healthier atmosphere, benefiting everyone - measures taken under Kyoto and similar treaties may have difficulty surmounting the second prong. Such measures need to be shown to be essential to reducing GHG emissions.

XX(g) refers to granting exceptions on general WTO policies in order to protect an exhaustible natural resource of the global commons. The exception applies only if a nation sets equal restrictions on all imports, as well as on domestically produced goods, and was formalized in order to prevent depletion of commonly used materials or trade in animal products obtained in a harmful manner (such as ivory). From the environmental standpoint, XX(g) could apply to an array of predicted consequences of global warming, including the extinction of various species as well as melting glaciers.

---

13 Ibid.
Potential Conflicts:

Despite the sustainable development goal enacted during the 1994 Uruguay round and other rhetoric regarding socially responsible operations, there are several angles from which GATT-Kyoto conflicts may arise:

- The most immediate and pivotal contradiction may come from the GATT and WTO disregard of Processes and Production Methods (PPMs) in determining the likeness of products. Only physical characteristics (i.e. fuel efficiency standards, glass safety in automobiles and similar requirements) are permissible under GATT law, while differentiating between imports based on the way in which they were produced is, at least theoretically, forbidden. Unincorporated PPMs have been officially excluded from WTO considerations on the basis of their being potential disguises for protectionism or a tool for dominant nations to impose their domestic policies on other, weaker countries.

- Under GATT Article I, ‘like products’ must be treated with Most Favored Nations (MFN) principle in mind; that is, a good from Country X must receive the same treatment as a good from country Y in any member state. No preferential management toward neighbors or partners in other, regional trade agreements is allowed. Discriminating among like products is prohibited—meaning imposing a barrier on products from one nation and promoting those of another is illegal under the WTO, regardless of whether one is “dirtier” than the other.

- GATT Article III describes a parallel provision, under which member states enjoying the benefits of market liberalization under the WTO can no longer favor or promote their domestic industries. This article, also known as the national-treatment principle of non-discrimination between domestic and foreign products, forbids either providing domestic industry with assistance or establishing different, stricter regulations on imported goods. Requirements regarding products physical characteristics—drugs’ chemical content, characteristics of machinery capacity, etc.—are permissible under GATT law, as long as they treat foreign products no less favorably than domestic ones.

There have been several cases in which trade barriers were created to protect domestic social interests, but because the measure was not adequately implemented domestically, or was implemented only on imported products, the nations in question were found guilty of trade violations. Such a case was Thai Cigarettes, when Thailand was found to have set an illegal embargo on foreign cigarettes without taxing its domestic industry or restricting it in a similar way. Though the ban was found justifiable under Article XX(b) as seeking to protect public health, it failed to meet the requirements of the Chapeau and the panel established to investigate the case determined Thailand was guilty of a GATT violation and had to call off its ban. Nonetheless, the prevailing message was that the reason behind the ban was justifiable under Article XX exceptions, and that had the regulation been applied universally—without favoring the domestic industry—it would have been legal.\(^\text{14}\) Ultimately,

the panel found that anti-smoking advertising is permitted in Thailand under GATT law (a breakthrough since, in many instances, governments are disallowed under the WTO to try and influence consumer opinion or interfere with the market in any way). The panel concluded in a determination that proclaimed public health surpassed the limitation on government, and could be interpreted as allowing unilateral measures as long as these are pursued equally.

A fundamental ruling combining the two Articles—I and III—dates back to the Belgium Family Allowances case of 1952, when the GATT panel examined complaints by the Norwegian and Danish governments that Belgium was halting purchase of their goods by public bodies on the grounds of their family allowances policies, which Belgium had apparently found insufficient. This was an example of an attempt to extend policies beyond national borders and discriminate between goods based solely on their origin’s social policies. The Panel declared such action illegal for GATT participants and ordered Belgium to revise its practices and end the ban. In the climate change context, an equivalent may apply to policies that try to discriminate against products made in environmentally-unfriendly methods by imposing tariffs on imports from certain nations, banning them altogether or advancing “clean” domestic products in the expense of imports.

**Precedents of Multilateral Measures Concerning PPMs**

In US-Tuna, several countries—Mexico being the head plaintiff—submitted a complaint against the US for its refusal to import yellow-fin tuna and associated products obtained in a harmful manner to dolphins, a species included in the country’s 1972 Marine Mammal Protection Act (MMPA). The complaint, filed in 1991, before the creation of the WTO, and discussed under a GATT panel, was found legitimate and the US was judged guilty of anti-free-trade behavior. The panel adhered to GATT language that prohibits the imposition of domestic policies on the imported products from another nation and determined that the US couldn’t single out certain tuna products for reasons relating to their PPMs, rather than their quality.

> “Article III: 4 calls for a comparison of the treatment of imported tuna as a product with that of domestic tuna as a product. Regulations governing the taking of dolphins incidental to the taking of tuna could not possibly affect tuna as a product. Article III: 4 therefore obliges the United States to accord treatment to Mexican tuna no less favorable than that accorded to United States tuna, whether or not the incidental taking of dolphins by Mexican vessels corresponded to that of United States vessels.”

Though this was initially a blow to the environmental viewpoint, provisions were ultimately included that slightly shifted the nature of the ruling. The panel allowed the US to require adequate labeling, stating whether a tuna products were dolphin-safe, and suggested its rules under the MMPA be made compatible with GATT systems by negotiating the adoption of similar

---


16 World Trade Organization Website. *Environmental Section- Dispute 4. Mexico etc vs. US: ‘tuna-dolphin’*. [http://www.wto.org/English/tratop_e/envir_e/edis04_e.htm](http://www.wto.org/English/tratop_e/envir_e/edis04_e.htm)

17 GATT Panel Report, US-Tuna (Mexico), ¶ 5.15. (This report was not adopted).
policies with other member countries. Most importantly, however, the panel’s decision in the matter was never adopted as the US and Mexico settled in an external bilateral agreement that ultimately obliged Mexico to include the dolphin-protecting nets.

A later case, filed in 1997 and adopted the following year, demonstrated a substantial shift in the trade mechanisms. *US-Shrimp* was an appeal filed by four shrimp-exporting countries (India, Malaysia, Pakistan and Thailand) against the United States for alleged discriminatory practices to their shrimp or shrimp-product exports. Under the US’s Endangered Species Act of 1973, the fishing of shrimp without Turtle Excluding Devices (TED) that prevent the capture of five different endangered species of sea-turtles was illegal. Thus, the US banned shrimp imports from the above countries and any other that didn’t comply with the standard. It invoked Article XX(g), claiming that the measure they had implemented was necessary for the protection of an exhaustible resource – the sea turtle. The interpretation of the Panel was a remarkable development from its preceding decision in the *US-Tuna* case:

“Conditioning access to a Member’s domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the exceptions (a) to (j) of Article XX. Paragraphs (a) to (j) comprise measures that are recognized as exceptions to substantive obligations established in the GATT 1994, because the domestic policies embodied in such measures have been recognized as important and legitimate in character. It is not necessary to assume that requiring from exporting countries compliance with, or adoption of, certain policies (although covered in principle by one or another of the exceptions) prescribed by the importing country, renders a measure a priori incapable of justification under Article XX. Such an interpretation renders most, if not all, of the specific exceptions of Article XX inutile, a result abhorrent to the principles of interpretation we are bound to apply.”

In other words, under the Article XX exception, an importing country can prescribe measures that an exporting country would be required to comply with. As of yet, there has been no ruling on whether measures that protect an interest outside the territory of a member can be justified under Article XX. The question is whether there is some sort of implied jurisdictional limitation on Article XX, and whether its exceptions can be invoked to protect a non-economic interest beyond the borders of the importing country.

The Appellate Body found that sea turtles were an exhaustible resource, and that the U.S. embargo related to the conservation of sea turtles. All parties involved had policies that concerned the protection of sea turtles, the U.S. policy applied only in areas where there was a likelihood of harm to turtles, and the measure was taken in conjunction with domestic measures that had the same effect on the domestic shrimp industry. Finding the U.S. measure consistent with Article XX(g), the Appellate Body then had to determine its compliance with the chapeau of Article XX.

---

To comply with the chapeau, a measure must not be applied so that it constitutes an arbitrary discrimination between countries where the same conditions prevail, an unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on trade. The Appellate Body in performing its analysis stated that Article XX must be read in the context of the WTO preamble, which proclaims the need for “the optimal allowance of the world’s resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment.” The Appellate Body then stated that applying the chapeau is a delicate balancing act, “Marking out a line of equilibrium between the right of a Member to invoke an exception under Article XX and the rights of other Members under varying substantive provisions (e.g., Article XI) of the GATT 1994, so that neither of the competing rights will cancel out the other and thereby distort or nullify or impair the balance of rights and obligations constructed by Members themselves in that Agreement. The location of the line of equilibrium, as expressed in the chapeau, is not fixed and unchanging; the line moves as the kind and shape of the measures at stake vary and as the facts making up specific cases differ.”

This balancing act gives some flexibility to a Panel in making its determination, a fact that may be useful for cases brought before it that deal with Kyoto or other MEAs. It was the Chapeau analysis that gained the victory for the Asian countries, “Not because it [the US measure] sought to protect the environment but because it discriminated between WTO members. It provided countries in the western hemisphere—mainly in the Caribbean—technical and financial assistance... It did not give the same advantages to the four Asian countries...”

The Appellate Body in the ruling of Malaysia’s subsequent appeal maintained that countries can, and should, protect their environment without requesting the Body’s approval, that the US ban was legitimate under GATT Article XX(g) but that it failed to comply with the article’s Chapeau. The Appellate Body did not examine whether the embargo was a barrier to trade; having found that the measure failed to meet the exception, no further analysis was performed. It is possible that a measure could meet the exception, but still constitute a barrier to trade and thus be illegal under the WTO. This interpretation means that as long as standardization is equally pursued domestically and among all trade partners, Article XX could be used to justify restrictions on trade that are used to protect the environment and reduce GHG emissions.

---

19 World Trade Organization Website. Uruguay Round Agreement: Marrakech Agreement Establishing the WTO. [http://www.wto.org/English/docs_e/legal_e/04-wto_e.htm](http://www.wto.org/English/docs_e/legal_e/04-wto_e.htm)
20 Shrimp turtle, ¶159
This case provides two critical insights into how Kyoto or similar environmental agreements might be addressed in a WTO case:

1. First and foremost, a measure that would limit imports of a particular good to meet Kyoto-type environmental standards adopted by the importing country must not be enacted solely for trade purposes. The country must have a legitimate reason for pursuing such a measure, and that reason must be met by the enactment of the measure. If a measure is ostensibly for the protection of the environment, but in reality a means of protecting the domestic industry or punishing a foreign producer, the measure would be in violation of WTO rules. Kyoto and other environmental measures cannot be used as an excuse to raise trade barriers without producing realistic environmental results. Although the abuse of Article XX is a potentiality, it must be kept in mind that as long as there is a legitimate reason for enacting a particular measure, then the exception is warranted under WTO rules. A country like the United States is susceptible to such cases, as a non-Annex I country under Kyoto and as the primary trading partner of many countries. Any attempt to convince the United States (or other countries) to follow Kyoto or other environmental standards by restricting or otherwise affecting their exports must be done solely for environmental reasons.

2. The second important issue raised by US-Shrimp is that PPMs may, in fact, be utilized in distinguishing among products, and permit countries to treat them differently—in initial market accession as well as labeling criteria. This would have significant ramifications for measures that blocked the imports of goods or services because the way that they were made was environmentally damaging. Products that are not ‘like’ may certainly be treated differently, and if environmental impact is determined to be a physical characteristic then all products can be judged according to their pollution contribution as a “likeness” factor. Environmental damage, in this case, would transform from a PPM related issue into a physical determinant and would thus become central and feasibly usable in the attempt to coerce participation in Kyoto or any subsequent agreement.

**Precedents of Unilateral Measures that Address Physical Characteristics (Pertaining to the Environment)**

The US-Tuna and US-Shrimp cases are two key cases, widely recognized and cited in the discussions over MEA-WTO compatibility. Progress in interpretation leading up to rulings and the evolution in the legal philosophical discourse of the WTO Dispute Settlement Body (DSB) are evident, however, in more recent cases and their results.

The EC-Asbestos case of 2000 was a complaint brought by Canada to the WTO panel regarding France’s ban on white (Chrysotile) asbestos, considered to be an extremely detrimental substance, exposure to Chrysotile asbestos, or to products containing it is a grave health risk. The panel needed to determine whether Chrysotile asbestos fibers and
PCG fibers—similar materials prevalent in France’s domestic industry—were like products, and thus should be treated accordingly. In doing so, the panel considered four factors: (1) the characteristics of the product; (2) the end use of the product; (3) consumers’ tastes and habits; and (4) the tariff regimes of other members (where a particular product shows up on a tariff schedule).

The original panel of the DSB reached rather equivocal findings, and though it found France’s measure to be a violation of WTO rules because the two materials could be considered ‘like’ under certain circumstances, Canada appealed the decision because it disagreed with other conclusions on the panel’s report that rules against its complaint. The Appellate Body formed actually ruled, contrary to Canada’s aspirations, even more in favor of France’s actions. It examined whether a scientific basis or a consumer consensus existed regarding the differences between the two materials and about Asbestos’ damaging traits, and found that such consumer preferences existed to the degree they constituted a differentiating element that made PCG fibers and Asbestos fibers ‘un-like’ products. The Appellate Body further clarified consumer preferences as “the extent to which consumers perceive and treat the product as alternative means of performing particular functions in order to satisfy a particular want or demand” and in its report, stated that consumer opinions with respect to which goods they choose can be shaped by criteria such as the goods’ effects on health. These concerns extend from individual consumer to manufacturers and other commercial consumers. Although the Appellate Body’s report does not imply that consumer preferences would be a deciding factor, it does indicate that such preferences are important in determining whether goods are like products, and thus, whether they should be treated in the same manner.

The Appellate Body finally ruled that the asbestos ban and the permissions to let the domestic PCG industry continue functioning was not an act of national favoritism, nor discrimination between ‘like’ products. The ban was found to be consistent with WTO measures that permit national governments to pose restrictions they find indispensable to protect public health, as long as the restrictions are applied domestically to the same extent as they do on imports. The scientific evidence regarding the detriments of asbestos was clearly a central factor in the decision, but consumers’ view of the differences and the desire to avoid purchase and exposure to asbestos fibers also played a key role in the Body’s interpretation.

This case provides a pivotal glimpse into the possibility of utilizing domestic legislation and unilateral measures in the interim until an effective universal climate-change agreement is negotiated. Since the prospects of reaching in the near future a compromise that would satisfy both industrialized nations, developing countries and low-income manufacturing or industry giants (e.g. China, India and to an extent, Brazil) are fairly low, governments

http://www.worldtradelaw.net/reports/wtoab/ec-asbestos(ab).pdf

\[23\] *Ibid.* Pg. 47, ¶122

wishing to address global warming may be tempted to initiate their own independent policies. Since there are no legal precedents of climate-change related provisions that were enacted unilaterally and then disputed through an international court, EC-Asbestos could provide critical insight into the framework within which such a case would be judged. The burden of proof would lie with the importing country, and would have to include scientific evidence of the direct impact the imported goods will have on local population—a much more difficult task considering the diffused nature of global-warming damages. Nonetheless, EC-Asbestos is an example of a relatively successful provision pursued unilaterally, and could possibly be applied to similar climate-change abatement policies countries will seek until a multilateral agreement is reached.

The proceedings in this case and its ultimate verdict offer two meaningful lessons for the climate-change debate when unilateral action is concerned:

1. Domestic policies are permitted under WTO law and pursuant to its objectives. Each nation may have different views regarding the composites of public health, and could thus legitimize Article XX exceptions through environmental objectives related to health. The challenge with this option is the PPM versus physical characteristic qualification: Asbestos is harmful not only during its production process, but throughout the shelf-life of whichever product it is used in. Concrete containing asbestos could be poisonous to consumers, not merely environmentally unfriendly during its manufacturing, and that was the reason behind France’s ban. When GHG emissions are concerned, the bulk of public damage is done in the production process, making it more difficult for unilateral attempt to hold up under WTO critique without MEA instructions and evidence of direct influence on the nation’s consumers. To defy opposition, scientific backing regarding the “international nature” of emissions—the global damage to all the world’s citizens regardless of the location of pollution—can be utilized, and a nation could claim it is protecting its own public (and incidentally assisting the world’s) by refusing imports manufactured through extremely dirty PPMs.

2. National consensus regarding a certain issue—such as climate change, in this instance—could aid a WTO panel or Appellate Body in ruling in favor of a “violating country”, so long as its citizens find two products sufficiently unlike to publicly differentiate between them. This issue also pertains to the Technical Barriers to Trade (TBT) mandate to deal with labeling provisions, designed to inform consumers about a product’s non-tangible or non-visible characteristics in order to assist them in making educated decisions about its purchase. The TBT permits eco-labeling on many occasions and on the basis of this provision, consumer awareness could be further utilized, evolving from labeling requirements to explicit bans on specific types of products. In order to carry sufficient weight to pass a WTO scrutiny, these consumer preferences would have to be real and strong enough to have a significant impact on the market. The public would have to be overwhelmingly conscious to choosing between and among products, and actively exemplify this
consciousness in its consumption habits. More importantly, that determination would have to be visibly based on how a product was made and the environmental consequences it carried.

Additional examples can be found in two separate 1996 cases, *EC-Hormones*, in which both the US and Canada summoned the European Communities to a WTO dispute due to the EC’s ban on meat and meat-related imports from the US and Canada claimed to contain certain growth hormones outlawed in domestic legislation. The preliminary panel found the EC guilty of inconsistencies with several articles of the Sanitary and Phytosanitary (SPS) Agreement, but the Appellate Body formed after the EC challenged the initial finding narrowed the ruling down to a discrepancy with only two of the SPS provisions (3.3 and 5.1), mainly having to do with whether the ban is “based on the relevant international standards, guidelines or recommendations, if there is a scientific justification”\(^25\) and whether measures “are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations”\(^26\).

Though the Appellate Body eventually also judged somewhat in favor of the plaintiffs, a critical element was introduced into the interpretation and discussion processes of the DSB. The *Precautionary Principle*, which is fundamental in environmental thought and language, claims that a lack in decisive, absolute evidence of a health-risk or environmental damage should not be used as an excuse to delay preventive action against it\(^27\). The panel findings the Appellate Body revised had to do with whether the EC’s legitimate right to uphold domestic policies it found necessary or appropriate to prevent damage to public health without having to “downgrade” or relegate them to the international level. (The counts the EC were found to be guilty of touched more on the scientific basis upon which the policies and import-ban were based.) In a global-warming scenario, the IPCC could act as scientific backing for provisions passed unilaterally and justify actions meant to not only compensate for past environmental damage, but also prevent any future consequences. The inclusion of the precautionary principle in the deliberations of the Appellate Body is an encouraging sign that could establish more prudent jurisprudence habits, with vast implications for climate change related policies.

*Solutions to other conflicts stemming from partial participation and other technicalities*

A 2004 case sought by the US, *Mexico-Soft Drinks*, brought to the forefront the issue of parallel agreement participation and dual jurisdiction issues. In *Mexico-Soft Drinks*, the US claimed that Mexico’s 20% tax on imported soft drinks containing sugar other than domestically produced cane sugar was illegal under GATT Article III that states:


\(^26\) *Ibid.*. Article 5.1

“The products... imported into the territory... shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products”\textsuperscript{28}.

Mexico initially requested, during the preliminary consultation talks, that the WTO decline to establish a panel and instead refer the two parties to the NAFTA (North-American Free Trade Agreement) judiciary institution, of which they were both members. NAFTA, Mexico claimed, was more equipped to handle the dispute since it had been heavily involved in a broader issue concerning market access of Mexican cane sugar and related products. The WTO, however, refused to accept the request, ascertaining that once a consultation is evoked and charges pressed, the WTO must exercise its jurisdiction regardless of parallel mechanisms engaged in similar activities\textsuperscript{29}.

The case offers a valuable lesson regarding the possibility of negating WTO authority and delegating it to a different mechanism—in the climate-change case, an MEA committee or international court. Since the WTO has declared it will consider any case brought before it under the obligation of its mandate, it is therefore crucial that any climate change provisions, either domestic or international, be pursuant not only to an MEA constitution, but also to that of the GATT Agreement, so that they would be able to pass the Article XX exceptions if need be.

This lesson applies to multiple conflicts listed in the previous chapter. WTO jurisdiction cannot be overridden, and should be taken into account and possibly utilized when pursuing environmental standardization. The issue of non-signatories to an MEA and their giving subsidies to their industries by pardoning them from regulation costs could be solved under the claim that non-participants are breaching SCM rules. Though the attempt would be risky, since national policy choices are not to be used as a penalizing basis in the WTO, it could nonetheless work since the subsidy accusation is factually true.

The problems with the exclusivity of the current environmental regime—fractional partaking in permit exchanges and other Kyoto provisions reserved solely for Annex-I countries—could be resolved through a universal agreement that includes all signatories as equal contributors to target reductions. Similarly, incentives for domestic RE industry can be applied to imports of comparable products from other nations, so long as both are equally energy-efficient. The main concept behind the solution to the majority of conflicts with Kyoto’s technicalities is reforming the agreement—or creating a new one—in order to guarantee equal treatment, demands and benefits to all nations. International consensus regarding contentious issues would have to be achieved through difficult negotiations, but would ultimately be the only way to guarantee the immunity of the MEA in the face of WTO offenses.

\textsuperscript{28} World Trade Organization Website. \textit{GATT Agreement 1947. Article III.} \url{http://www.wto.org/English/docs_e/legal_e/gatt47_01_e.htm}

The Renewable Energy (RE) industry has the potential to be a key element in any plan to combat climate change. RE products have the potential to become instrumental in shifting the world’s energy consumption habits, and alleviating much of the damage from mitigation efforts on global GDP growth and economic development.

Due to high barriers to entry, technological challenges and other issues, the RE industry might not become fully competitive without international support in its initial stages. Financial incentives are thus the most obvious policy option to try to promote RE. RE incentives address the fundamental underlying issue of environmental degradation.

Unfortunately, even in this respect the implementation is not simple since financial incentives must be designed properly so as not to appear as outright subsidies—which are illegal under WTO law and the SCM Agreement. Though sectors such as agriculture and, more pertinently to the RE industry, oil and gas, have long been recipients of governmental support, there is a strong resistance among many economists and policy makers to allow assistance for technologies related to alternative energy sources, conservation or offsetting.

In 1999, the US fossil fuel industry (oil, natural gas and coal) enjoyed $2.3 billion in federal tax benefits while all renewable resources (aside from ethanol) combined—geothermal, wind, solar, hydroelectric etc.—received approximately $15 million. There are currently various types of financial incentives related to climate change abatement which target specific sectors or fulfill explicit goals in a region’s transition to usage of RE:

1. Investment tax incentives for corporations - Income tax reductions, credits or deductions (ranging from 10% to 35% in the US) on capital investment related to renewable energy industrial capacity projects, equipment and instillation.
2. Investment tax incentives for individuals - Credits for a purchase of a hybrid car, and personal income tax reductions or loan assistance for instillation of private heating systems that use photovoltaic or hydroelectric power.
3. Accelerated depreciation - Allowing corporations to depreciate equipment for renewable energy manufacturing more rapidly, thus curtailing the company’s declared income level and its tax obligations.
4. Value Added Tax (VAT) reduction - Assisting the RE industry with discounts covering the added value in VAT systems where a product’s final cost is aggregated along the supply chain values. This helps make the ultimate product competitive enough to rival similar goods that pass through fewer stages and thus aggregate less VAT.

---


32 Database of State Incentives for Renewables and Efficiency - DSIRE  
[http://www.dsireusa.org/glossary/glossary.cfm?&CurrentPageID=8&EE=0&RE=1#aggregation](http://www.dsireusa.org/glossary/glossary.cfm?&CurrentPageID=8&EE=0&RE=1#aggregation)
5. Leasing/purchase programs - Offers remote customers (usually farm residents), for whom ordinary grid installation would be extremely costly, the opportunity to lease technology (i.e. photovoltaic cells, modules and arrays) at a discounted rate, with the eventual possibility of purchasing the utility.

6. Feed in Tariffs/Net Metering - Refers to a well-in-advance purchase of future power that governments guarantee producers in order to encourage investment. This policy pertains primarily to small-scale producers who are also individual consumers, thus making their energy needs balance with energy they produce by purchasing and installing renewable energy technology in their homes.

7. Grant programs for Research and Development (R&D) - Since RE is primarily an innovation sector, investments in the development and improvement of existing and new capacities are crucial to the competitiveness of RE products. R&D incentives can offer up to 100% compensation for scientific research or commercial development costs associated with new technologies.

8. Property incentives - Allowing discounted renting or leasing of government lands to build factories of RE-related products or facilities.

9. Production incentives - Strengthening utilities’ incentives to generate clean energy by providing them with a set rate of cash rewards per KW/Hour (kilowatt-hour) produced with RE resources. Similarly, payments founded on $/gallon basis for use of biofuels (ethanol, switch grass etc.) in the transportation sector. These incentives can also include guarantees of purchase in long-term contracts based on the performance of the utility or fuel-manufacturer.

Nearly all of these incentives that involve corporations—rather than private individuals—can be presented as a breach of the SCM Agreement and thus be brought before a WTO panel if an affected country decides to press charges. To trump this difficulty, similar measures will have to be applied not just to local or other regionally selected enterprises, but to external corporations and all actors involved in the industry as well. In its 1998 ruling of the US-Shrimp case, the Appellate Body concluded that the US was guilty not because it introduced differentiating factors in shrimp imports, but because it didn’t do so universally. The US aided certain Caribbean island-states to better their shrimp-capturing techniques by contributing knowledge or lending TED equipment, and the Asian plaintiffs invoked their WTO rights because of an unjust MFN violation. Similarly to this case, standardization of the production methods of any good—from steel to electronics to energy used in services—could be pursued as long as it doesn’t discriminate between domestic and external companies, or among goods from different nations.

In order to support the various fiscal initiatives, Public Benefit Funds (also referred to as System Benefit Charges) can be established, and electricity consumption taxed by a certain amount so that consumers also experience the price of carbon externalities. An example can be the US’s current average of 0.2 cents/kWh of electricity. By comparison, the average price for residential consumption in 2005 was 9.45 cents/kWh—meaning the tax wasn’t a significant burden on consumers but still creates noteworthy revenue for the US federal government.

---


34 Ibid.
government. By contributing to the Public Benefit Funds, consumers assist in raising monies for incentives and R&D funds for renewable resource technologies.

Furthermore, Disclosure and Certification mandates on different energy types can provide consumers with more information on the benefits, downsides, accurate costs and future projections for each energy resource available to them. This is the equivalent of labeling requirements, meant to inform consumers of PPMs and their global implications. Since they cannot be determining factors by themselves according to the WTO, PPMs can be considered in conjunction with consumer-opinion, and possibly shift a WTO ruling in favor of environmental regulation (such as in the EC-Asbestos case discussed in Chapter 4). Labeling will only be effective as a singular tool when complemented by other related measures such as educational and consumer-awareness campaigns that reveal the often discreet characteristics of different energy sources.

These growth-stimulating incentives must be implemented alongside solid, concrete regulation that doesn’t only support “green energy” but also prohibits extreme violations of environmental standards by single actors. The Flexibility Mechanisms of Kyoto are an example of a push for an increase in RE and clean technologies, but unless universal emission cuts are implemented as well, they will simply provide incentives to shift polluting industries to non Annex-I countries. Policy programs that inform the public and businesses of changing trends will better prepare the market for future retail competition between different energy sources. Assistance to the RE industry could maintain WTO compatibility as long as incentives are evenly available, or adjustments are made to equalize between players with different obligations under Kyoto or other MEAs. Allowing developing countries to opt out of emissions reduction agreements will simply lead to the migration of polluting industries to the developing world but will not result in global reductions of GHG’s.

**Abatement Policies: Carbon Taxes versus Emission Trading Schemes**

A truly global scheme for reducing GHG emissions must therefore be constructed, and the two current prevailing options are emissions cap-and-trade (C&T) systems or a universal carbon tax.

A carbon tax is an additional cost paid to a government or regulating authority by industries, manufacturers or users of products that release CO$_2$ into the atmosphere through their manufacturing or consumption. The tax is intended to reduce the demand for carbon intensive products and energy by making them more expensive relative to cleaner competing products and technologies. In a carbon-tax system, no actual limit on GHG emissions is set and both consumers and manufacturers determine their own allocation according to their own needs and preferences.

A C&T system, however, would first define a total maximum amount of permissible emissions throughout the economy and then issue emissions permits that could then be traded on an open market between actors who had gone above or below their emissions targets. Private corporations will be given the opportunity to make cost-benefit analyses and decide whether and how much they wish to abate. Abatement would be transformed into a
source of income since permits could be sold on a trading platform for monetary compensation. Certain producers may choose to sell permits and eliminate all their carbon emissions, while others, due to large abatement costs, might find it best to buy as many permits as possible and avoid reducing their actual levels of carbon emissions. The overall quantity of emissions remains the same regardless of the cross-market distribution among producers, and the price is determined according to classical economic equilibrium theory.

If a carbon tax is incurred “upstream”—meaning the producers, refineries and other players in the fossil-fuel industry pay the tax directly to the governing authority—collection would only be necessary at one point along the production-consumption line, products’ end prices would reflect the added tax by an increase in price and the system would be fairly easy to administer. An emission trading system, on the other hand, would develop a new arena in which market forces determine the actual price of carbon emissions and government acts not as a tax collector but rather as a regulatory body. Though an emission-trading scheme is more volatile and complex to manage, it has the potential to achieve climate-change reductions in a more predictable method since it sets a clear, definitive limit on GHG emissions—which can be systematically reduced as time goes on. These quantitative targets are an element that the taxation policy option lacks. Nonetheless, carbon taxes are more straightforward and difficult to manipulate, and have the potential to reduce governmental taxes on social goods (such as income) by replacing them with Pigouvian taxes on social evils (in this case, polluting GHG). Each method has both innate advantages and pitfalls, all of which will be discussed in this chapter.

The Kyoto Protocol has already made use of the emissions-trading concept, though not in an all-inclusive manner. From a political perspective, though a carbon-tax would be administratively cost-effective, the C&T concept is more market-oriented and less politically contentious. An international C&T system will most likely determine a carbon price in a one set currency—the Dollar or Euro—and base its trade on that measure, while carbon taxes would be subject to exchange-rate fluctuations that could temper international competition and prices.

The Advantages of a Carbon Tax

- **Improves the competitiveness of clean technologies and alternative energies versus fossil fuels:** With a carbon tax, the price of a certain amount of carbon is directly linked to a fee paid by the producer to the governing authority. In theory, carbon taxes should reduce the competitiveness of fossil fuels versus clean energies and hence lead to reductions in GHG emissions as consumers shift to cleaner technologies and products. Carbon taxes also can provide a revenue stream with which to fund R&D or other incentives for alternative energies. Furthermore, the predictable nature of carbon taxes would assist in risk mitigation and long-term investments for corporations.

- **Year-to-year flexibility according to market conditions:** A carbon tax would allow manufacturers to abate more in years or periods when abatement is relatively less expensive, while incurring the tax and emitting more in other years when
abatement costs exceed the tentative tax. This is a critical feature to maintaining competitiveness and assuring that regulation is not so rigid that it prevents businesses from making market-oriented decisions. According to classic economic model, if in a certain year or period emissions are higher than usual because of increased abatement costs, equilibrium will be reached in a different year or period by decreased abatement costs, thus theoretically balancing the overall, long-term levels of emissions.

- **Administrative ease:** Imposing a new carbon tax would for the most part not require any major changes or additions to existing governmental institutions involved in the tax collection process. In contrast to C&T schemes, which would mandate the creation of complex mechanisms for implementation, the carbon tax is much simpler and much less prone to manipulation. Permit allowance distribution can be manipulated for personal, political or financial gain—while, theoretically, a carbon tax would be equally set on every business in every industry according to fossil-fuel usage levels.

**The Shortfalls of a Carbon Tax**

- **Target failure:** First and foremost, a carbon tax policy runs the risk of being failing to meet any designated environmental goals. Though the tax amount could be equated to the level at which marginal cost of abatement is the same as the marginal cost of polluting that additional amount (or the marginal benefit of avoiding that amount) there is no guarantee that consumers will change their behavior by purchasing cleaner energy. They might decide simply to pay the higher taxes.

- **Changes in monetary conditions and currency fluctuations:** While in an emission trading scheme permit prices automatically adjust for market indicators, a tax is a rigid amount, set in advance through a legislative process. There is no inherent mechanism in a carbon tax to respond to market changes as well or as quickly as a C&T system.

If the tax is applied separately in each country and not uniformly across the world, drastic differences in real costs could develop. Purchasing Power Parity (PPP) is different across regions, and the considerations of multinational corporations (MNCs) might be altered, giving certain nations an advantage over others because of governments’ manipulation of financial or foreign exchange markets, which can keep currency values artificially low. Currency disparities could maintain an artificially high carbon price in certain nations and offer imports unnatural advantages in global pricing models.

- **Political resistance:** Any new tax, even one that could potentially eliminate or reduce others, faces great difficulty in being enacted. This disadvantage is more logistical than scientific, but must nonetheless be taken into account when designing effective policy for implementation.
The Advantages of a C&T System

- A clear, definitive limit on GHG emissions: Perhaps the most important advantage a C&T system over other policy options—the cap itself—signifies the reasoning behind any policy aiming to reduce GHG emissions. If climate change is a legitimate threat to the global population then there is a need to establish a mechanism to promptly address it. A tax may be a pollution-deterrent, yet it neither sets a clear limit on how or how much abatement will actually occur. An emissions-trading system is an environmentally-predictable policy, rather than a price-predictable one, and guarantees that the market-wide or national level of emissions remain constant or declining regardless of distributional patterns.

- Market driven approach: A C&T system is less rigid than a tax in that it creates a new commodity—pollution permits—and allows the market to determine its ultimate fiscal value.

- Simultaneous private-sector and government revenue: In order to be legal under WTO law, permits in a C&T system must be auctioned, rather than allocated—since dispensing them without charge would be considered a subsidy under the SCM Agreement. If permits are sold and not allotted, the resulting revenue would be equivalent to a tax. Corporations, for their part, could profit from the exchange of permits, and thus intensify investment in RE technologies.

- Production flexibility and easy alteration to the system: Aside from the innate flexibility in the ability to choose abatement scenarios according to an industry’s adaptation capabilities and elasticity, other balancing mechanisms can be integrated into a C&T system. Saving permits and accumulating them during years in which demand is low in order to use them in the future—as well as prevent a price drop—is possible. Alternatively, measures to address high demand, like a legislative option of introducing more permits into the market in times when demand exceeds supply or abatement is particularly costly are also possible. Such safety valves enable authorities to regulate the market while still minimizing governmental intervention. A relatively newer alternative is permit borrowing—allowing firms to borrow in advance a certain percentage of their obligation in a given year, and pay interest on the permits borrowed. If future permit prices remain predictable, this suggestion could provide similar year-to-year flexibility as a carbon-tax. These provisions can make the C&T system as, if not more, flexible compared to carbon taxes, providing temporary sensitivity according to abatement conditions.

- Prevailing efficacy in the face of market forces: An emission trading market would easily adjust fluctuations in exchange rates, and permit prices would reflect the actual value of carbon through a single global price. No legislative action would be necessary to adjust for increasing or decreasing PPP since the market will determine permit prices by supply-demand equilibrium.
The Challenges and Problems of a C&T Mechanism

- **Price volatility:** As in any market, and especially because of unpredictable mitigation costs and other unknown factors (like the future marginal cost of abatement, breadth of technological breakthroughs and their efficiency levels), the price of pollution permits is at risk of being highly volatile and subject to frequent and acute fluctuations. In C&T system with a safety valve, the permit market could experience inflation if too many low-cost permits are issued, thus effectively diminishing the cost of pollution, pushing it closer to zero and making the entire system inadequate. In a system without a safety valve, prices could rise exponentially, to levels where companies would lose competitiveness and the regulation would pose a severe risk to the economy.

An example of volatility can be found in the US SO₂ (Sulfur Dioxide) C&T mechanism, established in the 1990s after the Clean Air Act demanded its atmospheric presence be reduced. The SO₂ permit price has fluctuated significantly, climbing from $66/ton in 1997 to $860/ton in 2006, after the overall market-wide cap was tightened. The price has moved up and down as much as 43% in a single year.³⁵ The EU, which has already implemented a regional carbon trading market—the European Trading Scheme (ETS)—can provide another, more pertinent example. The EU-ETS carbon permit prices have fluctuated, on average, 17.5% per month in the first 22 month since the platform’s inception in January of 2005³⁶.

Some emission trading critics point to these as precursors to any future CO₂ C&T scheme. They further note that, in comparison to the limited-participation SO₂ market, a CO₂ system would be subject to even more uncertainty since it wouldn’t be limited to coal-fired plants (as the SO₂ market is), but would rather have to assimilate actors from across the industry spectrum.³⁷ Overall, a market based approach to GHG reduction runs the risk of resulting in substantially lower environmental improvements or dramatically higher economic costs, depending on market behavior and other factors. It could thus promote instability, hinder investment predictability on behalf of both companies and individual consumers, and thwart attempts to make viable long-term calculations or rational decisions based on concrete information.

- **Rent seeking:** The initial phases of a C&T system would require an allocation mechanism and distribution formulae that could prove to be extremely politicized. The industries hurt most by an emission cap would seek compensation from the

---

³⁵ United States Environmental Protection Agency, “Clean Air Market: Data and Publications”.
http://www.epa.gov/airmarkets/auctions/index.html


government. This could result in the direct violation of WTO rules. Other sectors, such as the offset forestry industry, would seek credits for their positive influence on GHG concentration levels. The fear of impeding economic competitiveness, therefore, might overpower any WTO resistance or official MEA cap, as exemplified in the case of the EU-ETS, which in its preliminary operations allocated more permits than there was pollution. This effectively drove the price of carbon down to zero and thus failed to achieve the goal of the entire mechanism. In countries where democratic institutions are weak and fragile, a C&T would be subject to severe corruption. For example, even Germany announced in 2006 that its coal industry would be exempt from the European cap system, surrendering to corporate pressure on the government.38

- **System complexity:** A C&T scheme could prove very difficult and complex to implement and administer. It requires the creation of a financial platform to trade emission permits as well as a competent evaluation mechanism to inspect the nature of alleged reductions and guarantee that permits aren’t sold in vain. In addition to the administrative difficulties are other issues such the treatment of additional GHG aside from carbon, and the handling of carbon-sinks. Determining the participation levels of the offset-industry in a trading system is problematic, since granting them permits for their contribution to climate-change mitigation could be considered a subsidy. The integration of other GHG permits into the trading platform is also a challenge since they will have different pricing models and attributed values, thus making the system even more complex. A carbon tax could be applied not only to industrial manufacturers but also, for instance, to the logging industry, holding it equally accountable for environmental damage caused by the release of carbon captured in trees.

- **Global comparable effects:** C&T systems could create a wide net of effects and incentives from region to region or country to country, depending on the target of that specific nation, the base price of permits or the amount auctioned. Economic growth will likely play a critical role in C&T systems and could determine whether a nation adheres to its targets—if its economy slows, for instance—or fails to meet them—if growth is strong. If a uniform carbon tax is applied globally, however, incentives and deterrents wouldn’t vary according to country, but rather be similar across the board. Regardless of economic growth, the same cost would—theoretically, at least—be incurred by emissions intensive industries and the system wouldn’t differ in their enforcement standards, thus leveling the international playing field.

- **Unequal baselines:** The Kyoto Protocol Annex-I obligatory reductions by 2012 use 1990 as the standard baseline under whose levels reductions must be taken. This poses a problem since various countries have seen different developments in emissions and economic growth since that time. This signifies larger reductions for nations that experienced intensive energy demand growth since 1990 versus much

---

smaller reductions for nations whose energy demand or pollution hasn’t risen dramatically in the 90s and for whom meeting such a target would be much easier. Russia’s reduction of GHG level after the fall of the Soviet Union in the ‘90’s was not taken into account while the US’s energy usage boom during the ‘90’s left it with sharp disparities between current and 1990 levels. In a C&T system pursued similarly to Kyoto—determining a set year under which emissions are to cut—caps would mean varying efforts according to a country’s recent development. (In a carbon-tax scenario, however, former emissions levels bear no effect on how intensely the tax is levied and the MEA content doesn’t create differences between nations in this respect.)

Conclusions

Despite the significant differences between carbon taxes and C&T schemes, many similarities exist between the two in both a positive and negative sense:

- **Government revenue:** Both a carbon-tax and a C&T system with auctioned permits would involve a direct and significant increase in government revenue, which could then be used both to alleviate the social costs of climate change (health care and other needs), to support R&D and incentives for renewable technologies, and to supplement part of the traditional individual income tax. For example, a tax of merely $10 per Ct—less than the average associated carbon cost—would raise around $50 billion for the US government, which is equivalent of 7.5% of all federal income taxes.\(^{39}\) (Such revenues—and the reciprocal discounts in income taxes—were introduced in the UK during the 2001 climate change levy, which imposed a tax on energy business usage. The tax was expected to raise £1 billion during the first year\(^{40}\), but it ultimately did not achieve its goal of reducing either GHG emissions or personal income taxes.)

- **Elimination of excessive regulation:** With mandatory regulations in place, there would be no need for CAFÉ (Corporate Average Fuel Economy) standards and other superfluous measures, since an added cost would already be in place and the standards would materialize by themselves.

- **Uncertainty regarding ultimate climate change outcomes:** Though scientific evidence of climate change is concrete and clear-cut, it is important to ensure that the costs of emissions regulations—be they a carbon tax, a cap and trade system, or both, do not exceed the costs of climate change or cause a major recession.

---


Revenue manipulation: Funds raised from carbon taxes or permit auctioning could be misallocated and wasted without being used appropriately to address issues raised by climate change or development of alternatives to fossil fuels. This could be countered by specifying in any legislation how exactly revenue should be allocated and appointing an oversight authority to guarantee implementation. Revenue from either regulatory policy can thus be distributed to private corporations or research centers according to the best formula of measures described in section 5.1.

Regardless of what the optimal or most efficient method may be, the existence of emissions trading within the Kyoto Protocol, as well as widespread resistance to the introduction of new taxes makes it likely that a C&T scheme will probably be selected as the ultimate climate-change regulatory method.

There have been several national, regional and global reactions to this expectation:

The US, which strongly resisted any carbon taxation schemes during Kyoto negotiations and fervently advocated for a C&T system, has had experience with a pollutant-trading platform via the SO_2 program mentioned above. Though the US never ratified the protocol and thus has no mandatory reduction targets, a limited capacity US carbon market has in fact evolved. Under the 2002 Climate Action Plan, GHG intensity—the ratio of GHG emissions to economic output—is supposed to be reduced by 18% over the subsequent 10 years through a combination of voluntary actions by businesses and technological developments. Because of the voluntary nature of regulation, demand for carbon permits in the US has been low, but has nonetheless risen due to more thorough state-level legislation and certain companies’ desire to enhance their environmental reputation. As a result, registry and documentation units have been developed, mainly within the Department of Energy (DOE), and the Chicago Climate Exchange (CCX) was instituted and has been operational since 2003. Its stated purpose is developing the skills and mechanisms needed to facilitate trade in carbon permits, which in the US include credits from “sinks”—agriculture, farming, forestation, and other industries that sequester carbon through their activities. These sequestration credits are sold in the CCX in exchange for a discount in the buyer’s emission reduction target or for the ability to qualify as a “green” business.

California, the largest emitter of GHG among US states and the 9th in the international arena according to per-capita calculations, was the first to introduce a comprehensive, obligatory plan - the Climate Action Initiative, intended to reduce emissions to 1990 levels by 2020, and 80% below that by 2050. Despite the revolutionary decisions and

---


orders of California governor Arnold Schwarzenegger, the *California Global Warming Solutions Act* of 2006 gave no specific guidelines as to which method should be employed to achieve targets. Nonetheless, the California Air Resources Board, and the California Climate Action Team have indicated that the most favorable possibility is an emissions trading scheme, likely to be established shortly. Because of the concrete objectives it is facing, California will probably not choose a carbon tax, since such a policy would offer no certainty on target compliance.

It remains unknown whether California will establish a carbon market of its own or trade permits with other states, in which more stern policies have been forming. Oregon followed California with broad climate-change legislation\(^43\), and the seven Northeast states have created the Regional Greenhouse Gasses Initiative (RGGI) and are anticipated to launch a program similar to California’s\(^44\).

The global, and in particular trade-related, implications of these singular actions are still very much vague and tentative. If by 2012, the Kyoto expiration date, support is strong enough for the US to enter into an obligating agreement, federal regulation would have to be negotiated and implemented. The US will almost certainly support a flexible emission trading system over a carbon tax due to the politicized atmosphere opposed to levying new taxes.

Already, there has been some legislative action in the US Congress looking at ways to use trade measures to tackle international GHG emissions. Senators Jeff Bingaman of New Mexico and Arlen Specter of Pennsylvania have recently introduced a bill, known as ‘The Low-Carbon Economy Act of 2007,’ or S. 1766, to establish a cap and trade system in the United States that would limit the emissions of greenhouse gases by most domestic industries. The bill includes a measure designed to require foreign countries that have not taken comparable measures to restrict GHG emissions to comply with US rules by submitting allowances comparable to those required of domestic industries in the bill along with their exports of goods and services to the US.

While the bill is not expected to pass, it is a useful first step on the road to using trade measures to enforce environmental protection and reductions in GHG emissions. Future legislation should also consider other means beyond cap and trade systems, like carbon taxes as possible methods of enforcing emissions controls on foreign exporters wishing to sell their products in the US market.

US officials should bear in mind, however, that without significant steps being taken in the US to reduce our GHG emissions, US companies could find themselves subject to similar restrictions on their exports enacted by jurisdictions like the EU. Using trade measures to enforce emissions reductions is a two-way street, and if the US is not leading

[http://www.washingtonpost.com/wp-dyn/content/article/2006/01/02/AR2006010201467.html](http://www.washingtonpost.com/wp-dyn/content/article/2006/01/02/AR2006010201467.html)

the way in taking action to combat climate change, it will be forced to adopt to rules and regulations adopted by others without our consent or input.

Still, the US could construct its own C&T platform or, alternatively, join the EU-ETS and back a progressively all-inclusive international market. The EU will support such a move since it initially campaigned for rigid carbon taxes under the Kyoto Protocol and only reluctantly succumbed to US pressure for the emission-trading policy. Including the US in the carbon market would fulfill the original purpose of the EU-ETS and create much needed demand for permits, currently trading at €0.10/tC. This is an acute disparity between the earlier €30 price, which dropped significantly due to a surplus in permits allocated by European governments concerned for the competitiveness of their industries. Integrating the US, and then other participating nations, could expand the capacity of the system, which is currently composed of 25 European member communities. After considering the US’s lobbying for a C&T system and the international support it has accumulated, as well as the European costs and effort put into setting up the ETS, the EU has largely shifted its support away from carbon taxes and will probably remain a C&T advocator on its own.

The developing world remains mostly divided over the optimal policy option to fit its needs. Russia, whose emissions levels are already 30% below the 1990 baseline, without any mitigation efforts, stands to greatly benefit from a C&T system. The current Kyoto mandate is based on the concept of reductions below past levels, and since Russia’s current GHG emissions are naturally lower than in 1990 (due to the closing of scores of inefficient and polluting industries after the collapse of the Soviet Union), the country would gain revenue by selling credits for non-existent reductions. Aside from Russia’s obvious desire to have a C&T system instituted, other nations are supporting similar ideas. Certain factions in India also prefer a trading regime and object to taxation that may deter economic growth, asserting that India’s government already heavily taxes petroleum and generates much of its revenue from it. India demands a trading system with different national caps according to per-capita emissions, based on contribution to past temperature rises, where each country’s cap is set equally, with an identical personal fossil-fuel consumption limit per capita.

China, a pivotal participant in any efficient climate change MEA, generally holds an approach similar to the Indian proposition. Among the Group of 77 and China, a UN collective of developing nations, no real consensus exists. Many still support taxation, while others advocate for a trading regime. Generally, most support Kyoto style attempts that impose no mandatory requirements on their economies, but rather promote developmental Flexibility Mechanisms that assist in their technological and skilled labor force growth. Nonetheless, because of their dependency on foreign markets for survival, there is a chance many will concede to demands from the developed world and comply with environmental standards.

Though C&T has won several small victories, and momentum around it continues to build, there is still chance that a shift to carbon-taxes will ultimately be selected. Both options can be designed so that they are compliant with WTO regulations so long as the particulars of any scheme do not provide favorable treatment to domestic industry or specific countries. Since the WTO recognizes the unique needs of developing nations, an MEA that grants them temporary discounts or prolonged transition periods but nonetheless holds them accountable to the same standards is not only compatible with WTO law, but can also encourage trade in many realms. By opening up long-protected sectors such as agriculture in exchange for environmental improvements or conditioning clean-investment funds with the elimination of trade barriers, both MEA and WTO interests can be pursued simultaneously. It is the priority given to the climate-change problem and the authority granted to its MEA that will determine which policy option is best fit to deal with the myriad challenges of meeting WTO regulations and laws.

**Recommendations**

In light of the scientific evidence of climate change and the magnitude of its projected costs to society, public policies to lower carbon emissions and establish international institutions to regulate carbon emissions are likely to intensify. This trend should be encouraged. But given the difficulties involved in reaching and then implementing international agreements, individual states or economic areas should not back away from experimenting with their own solutions or encouraging foreign exporters to comply with their domestic environmental regulations. On the one hand, individual states should begin implementing climate change policies that impose a price on carbon emissions and promote energy efficiency and the utilization of clean energy sources. On the other hand, large markets like the United States and the European Union could make market access for exporters from countries with weak or non-existent regulations governing greenhouse gas emissions contingent upon participating in emissions reduction schemes.

The distinct division between developed and developing nations established in Kyoto’s mandate creates an array of potential conflicts previously examined in this paper. The ideal approach to resolving these issues is a system that demands equal reductions according to pollution levels regardless of economic status. So long as the system is crafted carefully to be in accord with WTO principles and rules, such a system will overcome the challenges that arise from partial participation and adequately utilize the organization as an enforcer. There are several specific steps that, if taken prudently, could assure the optimal success and WTO compatibility of any action related to climate change abatement:

1. **Any new climate change policies that have an impact on international trade must be clearly and transparently designed to protect the environment and not serve as a smokescreen for protectionist legislation.** The Doha DMD paragraph 32 has already stated its clear stance against the abuse of trade for environmental pretences.\(^{47}\):

---

\(^{47}\) Doha WTO Ministerial 2001: Ministerial Declaration, Paragraph 32. 
http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm
“The negotiations carried out under paragraph 31(i) and (ii) shall be compatible with the open and non-discriminatory nature of the multilateral trading system, shall not add to or diminish the rights and obligations of members under existing WTO agreements, in particular the Agreement on the Application of Sanitary and Phytosanitary Measures, nor alter the balance of these rights and obligations, and will take into account the needs of developing and least-developed countries...”

The WTO has made clear that it will not tolerate protectionist measures and that it will guard its jurisdictional oversight of international trade rules independently of other actors operating in the same sphere. Existing MEAs are cognizant of this issue and have clearly stated their intention of going along with WTO principles. Principle 12 in The 1992 Rio Declaration of the United Nations Environment Program states:

“Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade”\(^{48}\).

The Kyoto Protocol also entertains a sub-Article (Article 2.3) on this matter, depicting the potential abuse of trade as a negative. Nonetheless, the prohibition is included within a larger scope and doesn’t specify what is or is not forbidden under its measures:

“The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties...”\(^{49}\)

Nonetheless, so long as the environmental justifications for invoking trade restrictions are legitimate, they are allowed under WTO rules.

2. An effective climate change regulation must use specific language as far as the actual trade-provisions to be utilized in its implementation. This means differentiating between tariffs, barriers, sanctions on a limited line of products, total embargos, border-tax adjustments, import bans, standardization, CAFE requirements, labeling laws and others—in order to help ensure that the goal of any climate change regulation - in most cases reducing carbon emissions - is in fact met by the specific regulations enacted.

An example of this can be found in the relatively detailed Montreal Protocol on Trade and Production of ODS that in Article 4 details the compulsory standards each

---


signatory is to implement for its imports, the appropriate domestic plan for eliminating the existence of ODS, and until what date they have to be accomplished

3. Carbon emissions permits must be auctioned off, the auction scheme should be international in scope, and permits should never be allocated by national governments. If permit allocation is left entirely at the discretion of individual governments, the risk develops that many will choose to issue them to protect and advance local industries, and by that flood the carbon market, create “carbon inflation” and drive its price down. This would achieve none of the desired environmental targets, and could also come into conflict with WTO rules since allocating free carbon permits could be considered a subsidy that breaches the national treatment principle of GATT Article III and the SCM. To prevent both these detrimental consequences, a single system must be selected and rigorously pursued in all participating nations, with strict rules against providing discounts or “grandfathering” in local industry.

4. In order to resolve the jurisprudence problem of WTO members who aren’t signatories to Kyoto or its following agreement there must be even greater emphasis on universal enforcement regardless of MEA participation. In other words, Kyoto members should insist that even non-signatories to Kyoto are subject to its emissions reduction mandate by using trade restrictions as a stick to the carrot of market access.

To hold either non-signatories to the Kyoto accord or non-Annex 1 countries less accountable or subject to more lax regulation would create an imbalance in environmental regulations that would lead to a rapid transfer of polluting industries to unregulated jurisdictions and will never yield the desired results of GHG reductions. In such a scenario, emission levels would not change, but their location would. Since carbon presence in the atmosphere and its damages are indifferent to the pollution-location, none of the desired environmental gains would be achieved.

The Montreal Protocol on ODS could again provide an example of dealing with WTO members that aren’t signatories to the specific MEA, but are still required to adhere to its standards or face trade-related repercussions. Importing countries that banned products containing ODS, or produced with ODS, were allowed to do so under Montreal’s mandate as long as they did not act unilaterally.

The CITES agreement is an even better example, as it appointed in its mandate a specialized Enforcement Assistance Unit, containing personnel with active experience in international law enforcement. In order to fully reach its targets, any climate-change agreement must, first, specify precise blueprints and mechanisms for achieving compliance and, second, guarantee that the agreement encompasses all members—and non-members—equally. The Kyoto Protocol laid down the foundations for this with its “flexibility mechanisms” (such as

the Clean Development Mechanisms), but these must become obligatory, rather than voluntary. Annex-I countries will likely have to assist less developed nations in capacity-building of environmentally-friendly infrastructure. This may involve certain financial costs, but by conceding to such aid, Annex-I nations could stymie the outsourcing of industry and economic losses since they would guarantee equal universal regulation and its identical implementation everywhere.

5. Ideally, a post-Kyoto climate change treaty that was both universal and comprehensive and mandatory would be preferable to unilateral action. But given the political difficulties in negotiating such an agreement, the long time period before any new agreement could realistically be reached, and the necessity of dealing with climate change immediately, such unilateral action should be encouraged. Unilateral measures could come either from individual countries or larger groups of countries like the signatories to the Kyoto Protocol or the EU. Restricting access by exporters to major developed world markets could provide a powerful incentive to get countries with little or no climate change regulations to comply with emissions reductions policies.

6. In the case of unilateral measures, new rules would have to be crafted carefully to stand up to any appeals to the WTO that could result from provisions which restrict trade. Traditionally, national governments were allowed to make decisions regarding products’ physical characteristics but rules governing PPMs were suspected of being covers for protectionist trade measures. But as we have seen, several precedents have been established that are moving the WTO in the direction of accepting restrictions on PPMs as long as they implemented clearly and transparently to protect the environment and not a local industry. One key attribute of WTO compliant unilateral measures is the need to demonstrate that consumer preferences clearly distinguish between two products made with different PPMs. Scientific backing for the environmental advantage to be gained from the unilateral measure must be concrete so that it provides an empirical basis for a trade-limiting provision. The EC-Asbestos case, which concluded in a victory for France’s environmental rules, utilized both these principles and provides an example for future efforts. The French relied on the sound scientific evidence that Chrysotile Asbestos was detrimental all along from its production to the consumption stage, and was assisted by the fact that French citizen differentiated between it and other types of Asbestos. Similarly, a unilateral measure taken against polluting products will have to be based on the public health repercussions for the country in question, as well as a clear differentiation its citizens feel regarding products produced using ‘dirty’ production methods, as opposed to those made in an environmentally friendly manner.
Conclusion

After years of inaction, the U.S. is finally waking up to the dangers of climate change. While the Kyoto Protocol is perhaps a flawed effort at mitigating climate change, the failure of the U.S. to either ratify the Accord or take other unilateral action to reduce its GHG emissions leaves U.S. businesses and exporters in danger of being forced to comply with foreign emissions regulations which they had no hand in crafting. The E.U. is seriously considering using trade measures and other means to reduce the carbon footprint of imports into the EU. If U.S. policy makers do not act now to craft their own climate change legislation, the U.S. risks losing the regulatory initiative to the EU and others who are have got a head start on the issue.

Of course, a binding international agreement on GHG emissions would be the most effective means of combating climate change. But the diplomatic and political challenges of negotiating such an agreement mean that any such an accord is many years off. In the meantime, other means must be considered, including regional agreements and unilateral action. Trade measures are perhaps the most promising avenue to pursue here, because access to markets is a powerful incentive that can be used to alter the behavior of exporters even if their bases of production are in countries that are signatories to Kyoto or that lack effective environmental laws.

Our study has shown that, contrary to public perception, the WTO’s laws and regulations do not stand in the way of using trade measures to enforce environmental rules broadly and emissions regulations in particular. In fact, the WTO leaves open a large space for crafting climate change regulations. So long as emissions regulations are crafted and implemented so as to be applied universally, and not merely as a cover for protection of domestic firms and industries, they will prove legal and admissible under WTO rules. One finding of our study that is particularly noteworthy is the fact that cap and trade systems, as currently designed, could be in violation of WTO rules. Emissions permits cannot be allocated by governments to domestic firms, as that constitutes an illegal subsidy according to WTO rules, and must instead be auctioned off at their market value.

That said, properly designed cap and trade systems, carbon taxes, bans on certain dangerous chemicals and substances are all permissible under WTO
rules and may prove to be the only effective way of imposing emissions regulations internationally. Although there is some uncertainty as to what the substantive results of future legal decisions in WTO trade disputes will be, legal precedent in WTO case law is moving toward allowing certain kinds of production process methods to be regulated by domestic authorities, so long as the rules are instituted universally.

U.S. policy makers must act now to craft effective emissions regulations, and they should not hesitate from using trade measures to ensure that the rules do not end up hurting US business or creating new incentives to move production abroad to less well regulated areas. Because of the size and depth of the U.S. market, such action could force exporters to conform to U.S. standards, thus both reducing global GHG emissions and giving U.S. regulators renewed clout.

The ramifications of doing nothing are dire, both in terms of the rising costs of climate change, and the risk that the U.S. could cede the regulator initiative to others. If that happens, U.S. business will lose out. Conversely, if U.S. policy makers stepped up and provided leadership in this vital arena, setting technical standards and regulations, they could help spark a wealth of innovative new economic activity as firms invested in new and cleaner technologies and production methods.
Bibliography


10) Database of State Incentives for Renewables and Efficiency - DSIRE http://www.dsireusa.org/glossary/glossary.cfm?&CurrentPageID=8&EE=0&RE=1#aggregation


http://books.nap.edu/html/climatechange/


35) Renewable Fuels Association (RFA) Industry Statistics Outlook  
http://www.ethanolrfa.org/industry/statistics/

http://www.brdisolutions.com/default.aspx

http://www.theamericanconsumer.org/Shapiro.pdf

39) Stern, Nicholas et al. *The Stern Review on the Economics of Climate Chang: Executive Summary*. Her Majesty’s Treasury, October 2006. [http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)


50) World Trade Organization Website. *Items on the CTE’s Work Programme*. [http://www.wto.org/English/tratop_e/envir_e/cte00_e.htm](http://www.wto.org/English/tratop_e/envir_e/cte00_e.htm)
   [http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_07_e.htm#article20](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_07_e.htm#article20)
54) World Trade Organization Website. *Environmental Section- Dispute 8. India etc versus US: ‘shrimp-turtle’.* [http://www.wto.org/English/tratop_e/envir_e/edis08_e.htm](http://www.wto.org/English/tratop_e/envir_e/edis08_e.htm)