

Thinking Ahead on International Trade (TAIT) – 2nd Conference
Climate Change, Trade and Competitiveness: Issues for the WTO

Climate Change and Trade: Searching for ways to avoid a train wreck¹

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Thinking Ahead on International Trade (TAIT)

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I. Taking Stock after Copenhagen

A. Disarray in Denmark

Despite years of prior preparation and two weeks of intensive negotiations, the United Nations Framework Convention on Climate Change (UNFCCC) did not deliver a binding agreement. Instead, the chair announced that the Conference would “take note of” a three-page political document known as the “Copenhagen Accord”, originally brokered by the United States together with Brazil, South Africa, India and China (the so-called “BASIC” countries). The Accord reiterated core elements of the Bali Action plan, but it was short on new commitments. The Secretariat of the UNFCCC later clarified that the Accord is a political agreement rather than a treaty instrument and noted that provisions in the Accord “do not have any legal standing within the UNFCCC process even if some parties decide to associate with it.”³

The structure of the Copenhagen Accord differs importantly from the Kyoto Protocol – and the difference will have major consequences for the looming train wreck between greenhouse gas (GHG) control measures and the trading system. The Kyoto Protocol took a top-down approach with a collective target -- an average reduction in GHG emissions of 5.2 percent from the 1990 level to the 2012 level -- and then allocated specific targets to individual Annex I parties (advanced countries). By contrast, Copenhagen concluded with a bottom-up Accord. The Accord pledges to limit the rise in global average temperature to no more than 2 degrees Celsius above the pre-industrial level,⁴ but sets no collective target for the global reduction in GHG emissions. Instead it asks countries to list their national mitigation targets (for Annex I parties) and actions (for non Annex I parties), based on their own assessment of economic and political feasibilities.⁵ As of March 2010, about 100 countries have inscribed commitments (often conditional) under the Accord. Thus, from the get-go, there is no agreed standard for saying whether a country is, or is not, doing its fair share to limit global warming. Nor was any agreement reached on national or sub-federal measures that might or might not be appropriate for combating GHG emissions.

As Purvis and Stevenson (2010) noted, a top-down approach favors environmental objectives while a bottom-up approach favors political feasibility. The shift from the top-down approach under the legally binding Kyoto Protocol to the bottom-up approach under the non-binding Copenhagen Accord clearly reveals a collective preference among nations for flexibility in

³ See “Notification to Parties” by the UNFCCC Secretariat, dated January 25, 2010 (available at http://unfccc.int/files/parties_and_observers/notifications/application/pdf/100125_noti_clarification.pdf).

⁴ To date, the rise in global average temperature is around 0.75 degrees Celsius, and most of the rise has occurred in the past 50 years (IPCC 2007).

⁵ The Copenhagen Accord asked Parties to submit their mitigation plans, using the format of Appendix I (for Annex I parties) and Appendix II (for non-Annex I parties) attached to the accord by an initial deadline as January 31, 2010. Later it was said that the deadline is flexible.

designing their climate policies. It also reveals a strong aversion to the tug-and-haul of international negotiations that would lead to legally binding targets, and perhaps a schedule of permissible means for reaching those targets.

Will these revealed preferences evolve in the direction of the binding template established by the Kyoto Protocol? The UNFCCC works by consensus and that process alone foretells a long road towards any sort of post-Kyoto pact. Observers speculate that UN climate talks may follow the inconclusive fate of the Doha Development Round. A meaningful agreement is unlikely at the next UN climate conference in Mexico in November 2010 and even at the conference in South Africa in 2011.⁶

To make things worse, climate science is under siege. Following the “climategate” email scandal, parts of the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report (AR4) -- the climate change “bible” -- were revealed to contain flaws. The assertion in the 2007 IPCC report that Himalayan glaciers would disappear by 2035 was poorly substantiated.⁷ Further revelations were followed. The statement in the 2007 IPCC report that 55 percent of the Netherlands lies below sea level was wrong. The adverse impact of climate change on African crop yields and Amazon forests are being challenged.

Perhaps most damaging, Richard Lindzen, a respected professor of meteorology at the Massachusetts Institute of Technology, argues that “climate sensitivity” in response to a doubling of carbon-dioxide levels does not exceed 2 C°, a significantly lower value than the earlier IPCC calculations.⁸ In climate change modeling and projections, the concept of “climate sensitivity” is critical. This parameter measures the extent of global average surface warming following a doubling of carbon dioxide concentrations. The 2007 IPCC fourth assessment report estimated “climate sensitivity” in a range of 2 C° to 4.5 C°, with a best estimate of 3 C°. Obviously if the best estimate is 2 C° rather than 3 C°, countries can be more relaxed about implementing GHG control measures.

Even when piled on top of one another, these revelations do not dismiss the fundamental argument that human activity contributes to global warming – a claim that the IPCC characterizes as “unequivocal” and Al Gore called “an inconvenient truth.” Moreover, given the uncertainties of climate science, “tail risk” cannot be ignored – the not negligible possibility that average temperatures could rise by 5 C° by 2200, with disastrous consequences for ice caps, sea

⁶ This is the view of Yvo de Boer, the retiring executive secretary and *de facto* chief of the UNFCCC. See “UN official expects no climate deal until 2011,” Arthur Max, *Associated Press*, April 1, 2010 (available at http://www.google.com/hostednews/ap/article/ALeqM5gPQpDONfH7_E2Yv41FZDdlo_pxEAD9EPRTLO2).

⁷ The false Himalayan glacier claim was referenced to a report by World Wildlife Fund (WWF), an environmental advocacy group.

⁸ See “In denial“, by Steven Hayward, posted on the website of the American Enterprise Institute on March 25, 2010 (available at <http://www.aei.org/article/101757>).

levels, hurricanes, and more. However, it is both “inconvenient” and correct to observe that recent controversies have damaged the credibility of the IPCC and eroded the urgency of public action. This is particularly true in the United States, but a pitched battle is also being fought in France.⁹ In wake of public inaction, scientists are ramping up their research on geoengineering solutions, and beginning to think about appropriate rules for conducting geoengineering experiments.¹⁰

For the purpose of this paper, we accordingly assume that prospects are remote for the negotiation of legally binding commitments in the UNFCCC, in the sense of treaty obligations with a hard-edged dispute settlement mechanism akin to the WTO. As a consequence, we expect little or no UNFCCC guidance over the next five years with respect to national emissions targets or permissible GHG control measures.

B. National action to tackle climate change

In the United States, after the House passed its climate and energy bill, the American Clean Energy and Security Act of 2009, in June 2009 (H.R.2454, better known as the Waxman-Markey bill), the legislative process has been stuck in the Senate. In May 2010, Senators John Kerry (D-MA) and Joe Lieberman (I-CT) unveiled their draft bill, the American Power Act -- the Senate companion bill to the House-passed Waxman-Markey bill. While the Kerry-Lieberman bill and the Waxman-Markey bill differ in several areas, both are comprehensive energy and climate bills contain provisions related to energy efficiency and renewable electricity standards, investment in green and clean energy, and a cap-and-trade program to control emissions from major sources. Given changing political dynamics on Capitol Hill, however, US climate legislation seems highly unlikely in 2010.

National climate legislation has been delayed in other countries as well. Australia’s climate bill, which ambitiously embraces an emission trading scheme, has been twice rejected by the parliament.¹¹ The Canadian government has explicitly stated that it will wait for US legislation before enacting complementary controls. In March 2010, the Japanese Cabinet endorsed a draft climate bill. Japan remains committed to implementing a cap-and-trade scheme, aiming at a 25 percent cut in GHG emissions from 1990 levels by 2020, but the draft bill leaves details of the cap-and-trade program open for later discussion. In the meantime, the city of Tokyo recently launched a voluntary emissions trading scheme which requires covered entities to cut carbon dioxide emissions by 6 percent during the 2010-2014 period compared to their average level in

⁹ A climate-denial book written by former French science minister Claude Allegre, *L'imposture climatique*, has been roundly denounced by the French scientific establishment. See *Science*, 9 April 2010, p. 151.

¹⁰ See “‘Asilomar 2’ Takes Small Steps Toward Rules for Geoengineering”, *Science*, 2 April 2010, p. 22.

¹¹ See “Australian Senate defeats climate bill for second time,” GreenWire, December 2, 2009 (accessed via subscription).

recent years.¹² In Korea, the Framework Act on Low-Carbon and Green Growth passed by Korean national assembly in December 2009 went into effect on April 14, 2010. The Act provides a legal framework for the government's strategies on climate action including broad principles for trading emissions permits. The Korean government is now working on the details of its emissions trading scheme which it aims to implement in 2012.¹³

The disarray in Copenhagen and the slow pace of legislation in the United States and other countries have combined to weaken corporate interest in the climate agenda. According to the Economist Intelligence Unit (2010) which surveyed senior executives worldwide immediately after the Copenhagen conference, business leaders question whether political leaders will collaborate effectively, especially in the international context. Uncertainty over national climate policies makes firms hesitant to develop corporate strategies. These worries may explain the recent pullout of BP America, Caterpillar and ConocoPhillips from the US Climate Action Partnership (CAP) -- the coalition of business and environmental organizations which supports mandatory regulation, including a cap-and-trade system. Likewise, Arizona and perhaps Utah may leave from the Western Climate Initiative (WCI) which has been working to launch a regional cap and trade system in 2012.

The Great Crisis of 2008-09 slowed the pace of climate-friendly private investment. The Pew Charitable Trusts (2010) reports that overall investment in clean energy grew 230 percent from 2005 to 2009; however investment in 2009 declined by about 7 percent from 2008.¹⁴ On the other hand, the Great Crisis made its own contribution to lower emissions. Preliminary data released by the European Commission showed that carbon dioxide emissions from industrial plants and power stations covered by the EU ETS fell 11 percent in 2009.¹⁵ Moreover, the economic stimulus packages introduced in the wake of the crisis allocated substantial expenditures to climate related projects. Robins, Clover and Singh (2009) analyzed more than 20 economic recovery plans and found that about \$430 billion (about 15 percent of total aggregate expenditures) were associated with climate themes.

Finally, some companies are trying to seize business opportunities. Notably, in 2005 General Electric (GE) launched its "ecomagination" campaign. As part of the campaign, just in 2008, GE raised \$17 billion revenue from selling 80 green products; GE also invested about \$1.4 billion in

¹² See "Tokyo kicks off carbon trading scheme," Guardian, April 8, 2010 (available at <http://www.guardian.co.uk/environment/2010/apr/08/tokyo-carbon-trading-scheme>)

¹³ See "South Korea to Trade Carbon Emissions Rights," Wall Street Journal, March 25, 2010 (available at http://online.wsj.com/article/SB10001424052748704094104575144600765254496.html?mod=googlenews_wsj)

¹⁴ Among countries, China ranked first for overall clean energy finance and investment in 2009, followed by the United States.

¹⁵ See "Economic crisis cuts European carbon emissions" by Joshua Chaffin, *Financial Times*, April 1, 2010 (available at <http://www.ft.com/cms/s/0/b26d579e-3d99-11df-bdbb-00144feabdc0.html>)

clean technologies in 2008.¹⁶ As the world economy recovers, more corporations will tell similar stories.

C. The prospect of decentralized measures

An important consequence of disarray in the UNFCCC and faltering efforts at the national level could well be renewed activity by sub-federal regions, provinces, states and municipalities, as well as private corporations and NGOs, advancing both voluntary and mandatory GHG control programs.¹⁷ The potential implications of decentralized initiatives for the trading system are huge: none of the actors are members of the WTO and accordingly the rules of the multilateral trading system are at best a secondary concern. Moreover, once sub-federal governing bodies, private corporations and NGOs have enacted their own GHG control measures, it will require considerable political effort at the national level to conform those measures to the current or future rules of the multilateral trading system. *Post hoc* efforts to ensure conformity promise to be a larger version of the difficulties faced by the US executive branch in persuading the US Congress to amend US federal statutes to conform to WTO rulings (e.g., the practice of zeroing in anti-dumping calculations) or NAFTA obligations (the Mexican trucking dispute).

In the absence of binding international agreement, countries are more likely to adopt a wide range of policies which are tailored to fit different circumstances. Policies will differ by sector, by state, by type of measure adopted, and of course by country. Some countries may move forward with market mechanisms like cap-and-trade systems or carbon taxes;¹⁸ others may favor renewable energy and other regulatory standards; still others may favor performance standards; and finally, many will favor an array of subsidies. In the meantime, countries will look closely at tough energy-related standards and renewable energy.

II. Policies with Trade or Investment Dimensions

As we have suggested, climate policy is evolving towards a diversified mix of scope, size, and focus. Among the instruments are fiscal measures (tax incentives or outright subsidies),

¹⁶ For more details, visit GE's ecomagination website at <http://ge.ecomagination.com/index.html>.

¹⁷ California is a leading example. See "Another California Dream", *Wall Street Journal*, April 6, 2010, p. A16.

¹⁸ For example, early this year, France circulated a plan to impose a carbon tax on large industrial installations. Later, a delay in implementing a carbon tax was announced until France could secure agreement with its European partners. See "France turns to Europe for carbon tax plan," *EurActiv*, March 24, 2010 (available at <http://www.euractiv.com/en/climate-environment/france-turns-eu-carbon-tax-plan-news-375149>). Most recently, a French minister visited the United States in an effort to sell the idea of carbon taxes coupled with carbon tariffs. See "France takes carbon tariff campaign to Washington," *EurActiv*, April 8, 2010 (available at <http://www.euractiv.com/en/climate-environment/france-takes-carbon-tariff-campaign-washington-news-425425>).

regulatory measures (energy efficiency standards and labeling requirements), and market-based incentives (carbon taxes, emissions trading systems, and preferential government procurement). In pursuing their environmental goals, governments want to avoid ruffling political feathers at home. Accordingly, some climate options give rise to adverse implications for international trade and investment.

A. Public financial support

Public financial support takes various forms including subsidies, tax incentives, consumption mandates, and government procurement. In the context of climate change, this support focuses on green technology, energy efficiency, and clean energy.

1. Direct subsidies

Worries about climate change and energy security have prompted a search for alternatives to fossil fuel. Renewable energy targets are one consequence.¹⁹ For example, the European Union and China have set goals to increase the share of renewable energy by 20 percent and 15 percent respectively by 2020; many other countries have adopted similar plans. The International Energy Agency (2008) stresses the importance of increasing and diversifying renewable energy sources in order to stabilize GHG concentration at 450 parts per million (ppm). Unfortunately, few renewable energy alternatives are economically viable in competition with fossil fuels. Accordingly, countries have extended public support for promoting renewable energy. Public support inevitably deviates from the national treatment principle that undergirds the world system of trade and investment rules.

In particular, biofuels -- referring here to ethanol and biodiesels, mainly based on crops -- have attracted considerable political support and thus financial incentives. Both the United States and the European Union, the major producers of biofuels, provide substantial incentives to national biofuel production. These take various forms including subsidies, tax incentives, and consumption mandates. In case of the United States, more than 200 support measures (costing approximately \$5.5 billion to \$7.3 billion a year) are provided to biofuel producers (World Bank 2007). To single out the most important measures, the Volumetric Ethanol Excise Tax Credit (VEETC) was enacted in 2005 to provide ethanol blenders with an excise tax credit of 51 cents per gallon of ethanol through 2008; this tax credit was reduced to 45 cents starting in 2009 by the latest farm bill. The United States also provides tax credits of \$1.00 per gallon for producing or blending advanced biodiesel and \$1.01 per gallon for producing cellulosic biofuels. Thanks to government support, the production of biofuels could double in the coming decade (OECD 2008).²⁰ However, in the United States, as in the European Union, financial incentives are

¹⁹ According to the Renewable Energy Policy Network for the 21st Century (2009), by early 2009, policy targets on renewable energies existed in at least 73 countries.

²⁰ The United States and Brazil are currently the largest ethanol producers, and in 2007 accounted for about 50 percent and 36 percent respectively of world ethanol production. The European Union is the largest producer of biodiesel, accounting for about 60 percent of world biodiesel production (OECD 2008).

confined to national producers, and accordingly discriminate against cheaper and more GHG-efficient biofuels produced abroad.

China also offers significant support for renewable energy. The Chinese government currently provides a 0.25 yuan subsidy per KWH to biomass power plants. In 2009, China announced the Golden Sun Demonstration Program which will provide subsidies equal to 50 percent of the investment cost for grid-connected solar power systems (NFTC 2010). Emulating US and EU practice, Chinese incentives are directed at Chinese producers.

Even as governments have increased their support on renewable energy, they continue to subsidize fossil fuels on a vast scale. Fossil fuel subsidies contradict sensible economics and environmental objectives. They also distort world trade and investment patterns. Yet, according to the International Energy Agency (IEA 2008), fossil fuels will remain the main energy source, accounting for more than 80 percent of world energy needs in 2030.

The Global Subsidies Initiative (GSI 2009a) estimated that a global figure for fossil-fuel subsidies could be at least \$500 billion annually. The Environmental Law Institute (2009), which reviewed US federal subsidies for fossil fuels and renewable energy sources, found that subsidies for renewable fuels totaled \$29 billion while subsidies to fossil fuels totaled approximately \$72 billion over the entire study period (FY 2002-2008).²¹ Coady *et alia* (2010) report that petroleum product subsidies have increased in the recent years and project that consumer subsidies for petroleum products will reach \$250 billion, while tax-inclusive subsidies could be much larger, perhaps \$740 billion in 2010, or around 1 percent of global GDP, some \$73 trillion measured at PPP international dollars.

Citing an IEA estimate that consumer subsidies to fossil fuels and electricity in the 20 most developed countries are around \$310 billion per year, the GSI (2009b) calculated that removing these subsidies could result in reducing global CO₂ emissions by 13 percent in 2050. Similarly, the World Bank (2010) calculated that removing fossil fuel subsidies in the power and industry sectors could reduce global CO₂ emissions by 6 percent annually, while improving economic efficiency.

From an environmental standpoint, slashing fossil fuel subsidies is equally important as new support for renewable energy. Recognizing this fact in September 2009, leaders of the Group of Twenty (G-20) made a groundbreaking commitment to reform their fossil-fuel subsidies. President Obama's 2011 budget blueprint, released in February 2010, includes proposals both to eliminate fossil fuel subsidies and provide additional funds for clean energy projects. The clean energy part of the package will almost certainly have a "buy national" flavor, if not in the president's proposals, then in enabling legislation.

2. "Buy national" procurement

²¹ The Environmental Law Institute noted that a significant portion of the \$29 billion subsidy for renewable energy went to corn-based ethanol, with doubtful benefits for life-cycle GHG emissions plus an upward push on food prices.

In the midst of the Great Crisis, protectionist forces grew stronger in many countries. In February 2009, President Obama signed into law the American Recovery and Reinvestment Act (ARRA) of 2009. This \$787 billion stimulus package included a “Buy American” amendment. The Act states that “none of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.”²² While waivers and exemptions were attached to the Buy American amendment, the provision sparked protest abroad and, more importantly, gave a green light for similar “buy national” provisions in economic stimulus and green technology programs worldwide.

Reinforcing this unfortunate trend, some senators have introduced legislation that would direct stimulus funds to clean-energy projects that rely solely on materials manufactured in the United States and create a majority of jobs at home. They complain that energy projects supported by stimulus money have gone to foreign companies since the Buy American amendment only applies to the government contracts, not to procurement by private firms.²³ The proposed bill would extend the Buy American provision to private firms.

China is pursuing a similar course of “buy national” measures. China gives high priority to renewable energy, even as it builds a new coal-fired power plant every week. China’s policies aim at home-made renewable energy equipment.²⁴ The 2002 government procurement law, which took effect in January 2003, directs government entities to give priority to domestic goods with a few exceptions. The National Foreign Trade Council (NFTC 2010) noted that this law does not apply to state-owned enterprises; nevertheless state-owned wind farms are applying “Buy China” rules to their equipment purchases, particularly when government funds are used. Since 2002, other policies likewise mandate the use of local content in building renewable energy facilities. Chinese solar arrays and nuclear power plants, like wind farms, will likely give a very high preference to Chinese producers.

Following the announcement of China’s 4 trillion yuan (US\$568 billion) stimulus package in November 2008, which allocates substantial spending to renewable energy projects, the National Development and Reform Commission (NDRC) and eight other government agencies issued a document known as Circular 1361 in May 2009. The circular requires that government investment projects give priority to domestic goods, construction engineering, and kindred services. While the circular is not legally binding, the adverse implications for foreign firms are obvious. Joerg Wuttke, president of the European Union Chamber of Commerce in China, complained that foreign companies were frozen out of the bidding process for a package of 25

²² See section 1605 of the Act (the full text is available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf).

²³ See “Senators Want ‘Buy American’ Rule in Stimulus,” by John Broder, March 3, 2010 (available at <http://greeninc.blogs.nytimes.com/2010/03/03/senators-want-buy-american-rule-in-stimulus/>).

²⁴ For detailed information about China’s policies on renewable energy, see NFTC (2010).

wind turbine orders worth about US \$7 billion. Specifically, the top three wind turbine manufacturers -- Vestas Wind Systems (Denmark), GE Energy (US), and Gamesa (Spain) -- were rejected early in the bidding process.²⁵ As the United States and other countries ramp up spending on renewable energy projects, the temptation will be strong to emulate China's "buy national" model.

In January 2010, China's State Council Legislative Affair Office (SCLAO) released draft regulations which state that "indigenous innovation products" will be placed on the government procurement "priority" list, and that foreign products will not be considered (NFTC 2010). In November 2009, the Ministry of Science and Technology, and Ministry of Commerce released Circular 618 which outlines a plan to create a national catalogue of accredited indigenous innovation products. The circular proposed six technology areas for vetting: computers, clean power, communication, office equipment, software, and energy-efficient products. While the accreditation process does not expressly exclude foreign-invested firms based in China, most foreign firms find it difficult to satisfy the certification requirements. Since China is not a party to the WTO's Government Procurement Agreement (GPA), the "indigenous innovation" policy does not offend WTO rules. At this juncture, China has no obligation to extend national treatment to foreign firms with respect to government procurement.

3. Loan guarantees

Many countries have given financial support in the form of loan guarantees to energy and climate related programs. To illustrate with US examples, President Obama's 2011 budget proposed to triple nuclear loan guarantees to \$54.5 billion. The US Department of Energy (DOE) has already launched loan guarantee programs for eligible clean energy projects under the Environmental Policy Act of 2005. In February 2010, the US DOE offered a \$1.37 billion loan guarantee to Bright Source Energy, based in Oakland, California, which operates a large scale solar power array.²⁶ Through section 1705 of the American Recovery and Reinvestment Act of 2009, the US Congress authorized \$4 billion of loan guarantees for renewable energy generation and transmission projects.

Many countries besides the United States have already adopted, or will adopt, the loan guarantee approach. Whether the underlying projects operate on a sound financial footing, or turn out to be tomorrow's version of yesterday's subprime mortgages, remains to be seen. Also to be seen is whether the guarantee fees bear any resemblance to commercial terms. Very likely these schemes will ultimately entail substantial subsidies.

B. Border measures

²⁵ See "Foreign companies blowing in the wind," Wu Zhong, *Asia Times*, June 11, 2009 (available at http://www.atimes.com/atimes/China_Business/KF11Cb02.html).

²⁶ See "Loan Guarantee for A Big Solar Power Plant," *New York Times*, February 22, 2010 (available at <http://greeninc.blogs.nytimes.com/2010/02/22/loan-guarantee-for-a-big-solar-power-plant/>).

Climate policies in OECD countries contemplate immediate overt subsidies in the form of free allowances and quasi-subsidies in the form of sector exemptions. They also contemplate deferred border adjustment mechanisms applied to imports from “nonconforming countries” (our term). These measures, designed to address competitiveness concerns both for exports and imports, will almost certainly discriminate between domestic producers and foreign producers and among different foreign producers. A verbal backlash against the gamut of potential US measures has already been mounted in China and India, suggesting that retaliatory action and WTO challenges are likely.

Tensions over trade and competitiveness questions were palpable in Copenhagen; however, no agreement was reached and the Copenhagen Accord is silent over trade-related issues. The United States sought terms that would hold large and successful developing countries, exemplified by China, India, and Brazil, accountable for their emissions, and the United States also pushed hard for explicit recognition of the right to impose border measures on imports. Pushing back, many developing countries demanded that developed countries should renounce the use of border measures as part of their domestic climate policies.

Given the dim prospects for a binding UNFCCC agreement either in Mexico or South Africa, deferred border measures seem almost certain.

1. Duties and charges on imported products

In the US legislative process, competitiveness concerns are dominant, reflecting fears that mandatory programs will simply erode US industrial competitiveness with no reduction in global GHG emissions. The Waxman-Markey bill, passed by the House in June 2009, contemplates trade restrictions, for the most part to be imposed after 2020, against US trading partners that do not undertake similar climate action.²⁷ In addition to border measures, the Waxman-Markey bill also provides for the free allocation of allowances: to alleviate the initial “sticker shock,” about 70 to 80 percent of allowances created by the Waxman-Markey bill would be allocated for free for extended periods of time.

Companion legislation debated in the Senate includes similar trade measures and free allocation rules to address competitiveness concerns. Even though the European Union’s Environmental Trading System (ETS) does not contain border measures, the idea of border carbon tariffs has long been advocated by European leaders. President Nicolas Sarkozy of France and Chancellor

²⁷ Under the emission allowance rebate plan, energy-intensive trade-vulnerable industries are eligible for rebates to compensate both for direct and indirect costs imposed by the bill. If the president so decides, starting in 2020, the international reserve allowance program can require importers of covered goods to purchase permits – when fewer than 85 percent of imports in a sector come from “well-behaved” countries (meaning countries that meet one of criteria listed in the bill). The Kerry-Lieberman bill, companion legislation debated in the Senate, also includes border adjustment provisions for carbon-intensive imports that are similar to those found in the Waxman-Markey bill. However, the Kerry-Lieberman bill gives the president the authority to make a final determination on the application of border measures, and he can delay the determination until 2023.

Angela Merkel of Germany are enthusiastic supporters of taxing imported goods from countries without comparable climate policies.

The United States and the European Union maintain high tariff barriers on ethanol and other biofuels while substantially subsidizing renewable energy production. For example, since 1980, the United States has also imposed a 54 cent per gallon specific tariff plus a 2.5 percent *ad valorem* tariff on imported ethanol (GAO 2009). Brazil from time to time suggests that it might challenge US ethanol tariffs in the WTO.²⁸

2. Technical standards affecting internal sales

Mandatory or voluntary technical regulations and standards that aim at promoting energy efficiency and reducing GHG emissions include energy-efficiency standards (e.g., the US Corporate Average Fuel Economy system, CAFE), labeling requirements (e.g., Australia's energy rating label scheme for household appliances), and private systems for identifying green products. These measures, which are instituted at federal, state, city or corporate levels, could act as barriers by restricting the import of goods and services deemed to be energy inefficient or excessively emitting.

Labeling schemes are becoming quite popular. The coverage of labels is being extended – starting with energy efficiency labels and moving on to life-cycle labels for new products. The European eco-label scheme, for example, has evolved considerably since it was established in 1992. While the eco-label is a voluntary scheme, it already covers a wide range of goods and services. The label is only awarded after verification, based on analysis of environmental impacts over the product's life cycle.²⁹

The European Union also has a mandatory labeling scheme which requires new cars to display labels showing levels of CO₂ emissions in units of grams per kilometer (WTO/UNEP 2009).

3. Import bans

Technical barriers can also result in import bans – in other words, prohibiting non-compliant imports from entering the market because they are deemed harmful to the environment or human health. For example, some countries have passed measures to phase out the sale of incandescent light bulbs. A ban on imports is logical corollary. The import ban will, however, raise GATT

²⁸ International trade in biofuels is very small but Brazil remains the largest exporter of ethanol to the United States, mainly due to its low production cost and partly due to the duty-free status granted by the United States to Caribbean Basin Initiative (CBI) countries. If at least 50 percent of the feedstock is grown in CBI member countries, an exporter can ship ethanol duty free to the United States. In addition, CBI countries can export volumes of up to 7 percent of US ethanol consumption duty free if more than 50 percent of the feedstock comes from nonmember countries. So far, US imports of ethanol from CBI countries are far below the 7 percent cap (GAO 2009).

²⁹ For more information about European eco-label scheme, visit the European Commission website at http://ec.europa.eu/environment/ecolabel/about_ecolabel/what_is_ecolabel_en.htm.

issues if it gives a preference to domestic production, or if the underlying restriction lacks a scientific foundation.

4. Other measures

Capital requirements might effectively bar foreign firms from certain climate related projects. For example, the registered capital requirement for a foreign or Sino-foreign wind power project is a minimum of 33 percent while the requirement for Chinese companies is 10 percent (NFTC 2010).

III. Existing WTO Rules that Bear on Climate Policies

This section, which draws heavily from Hufbauer, Charnovitz, and Kim (2009), briefly summarizes articles of the General Agreement on Tariffs and Trade (GATT) and other WTO agreements that might be cited in potential disputes over GHG trade measures. Detailed analysis of relevant WTO rules can be found in Appendix A of this paper. And more detailed analysis of key GATT articles, WTO agreements, and the decisions of the GATT panels and WTO Appellate Body can be found in Hufbauer, Charnovitz, and Kim (2009).

A. Countervailing duties, anti-dumping duties, and “carbon free riding”

Countries that take action on climate change will probably resent “carbon-free riding” by countries action that do not bear their fair share. Within the GATT context, it is controversial whether government inaction with respect to adequate GHG control programs can be characterized as a public subsidy or as environmental dumping. The first characterization points to countervailing duties (CVDs); the second characterization points to anti-dumping (AD) duties. It would take a major rewrite of the relevant WTO rules -- the Agreement on Subsidies and Countervailing Measures (ASCM) and the ADP (WTO Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994) -- before either CVD or AD penalty tariffs could be applied in confidence to “carbon free-riding” imports.

B. Agreement on Subsidies and Countervailing Measures (ASCM)

Even though it is highly problematic whether CVD or AD penalty duties can be imposed by importing countries to “correct” for the absence of carbon controls on the part of exporting countries. But that is not the end of the subsidy story in the nexus between climate policy and trade rules.

In the multilateral trading system, the Agreement on Subsidies and Countervailing Measures (ASCM) provides the basic guide. Climate control policies often envisage long-term free allocations and exemptions as a cushion for energy-intensive and carbon-intensive industries (including agriculture) – both when they sell at home and when they sell abroad.

Such policies raise questions when they intersect with the ASCM. Does the free allocation of emission allowances to domestic firms entail a subsidy? What about the wholesale exemption of

an emitting sector – livestock to take the paramount example? And what about the rebate of allowances upon the export of a carbon-intensive product? These questions have no obvious answers in the WTO text, and so far WTO jurisprudence has not enlightened us (Lodefalk and Storey 2005).

C. Agreement on Technical Barriers to Trade (TBT)

The scope of the TBT agreement includes both mandatory and voluntary measures. Mandatory measures are termed “technical regulations” and are defined as any measure that “lays down product characteristics or their related processes and production methods.”³⁰ Technical requirements related to energy efficiency and carbon emissions typically depend on process methods rather than on product characteristics. While similar legal principles apply to both mandatory and voluntary measures under the TBT agreement, a distinction exists on the level of obligation. For mandatory regulations, members have a positive obligation to ensure that their regulations are consistent the provisions of the TBT Agreement. With regard to voluntary standards, members are only required to take “reasonable measures” (WTO/UNEP 2009).

In decided cases, the Appellate Body has not examined the language concerning “related processes and production methods.” It seems likely that the term “related” will be stretched to include the energy used or the carbon emitted in making a product, but no case is yet on point. If a regulation about the energy footprint of a product is not covered by the TBT agreement, it would be covered by GATT Articles III:4 or XI, and these provisions strictly limit discrimination against imports.

D. General Elimination of Quantitative Restrictions (GATT Article XI)

GATT Article XI prohibits the imposition of quotas, import or export licenses, or other measures on trading partners unless they fall into one of the exceptions listed in paragraph 2. GATT Article XI:1 states: “No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party....”

As mentioned earlier, if a regulation based on the energy footprint of a product is not covered by the TBT agreement, it would be covered by GATT Articles III:4 or XI. Pauwelyn (2009) noted that if any restriction or regulation is applied to both imported products and like domestic products, then in principle it should fall under GATT Article III. The restriction would likely be acceptable under GATT Article III if it did not discriminate against imports. However, measures which are applied to imports based on process and production methods, not on product characteristics, would fall outside the scope of GATT Article III and instead would very likely be prohibited under GATT Article XI (Pauwelyn 2009).

³⁰ Agreement on Technical Barriers to Trade, Article 1.2 and Annex 1, paragraph 1. The TBT agreement does not apply to sanitary or phytosanitary measures (see Article 1.5).

E. National Treatment (GATT Article III)

The fundamental national treatment principle in GATT Article III holds that an imported product is to be treated no less favorably than a like domestic product. This purpose is carried out through two principal provisions: the first sentence of Article III:2 deals with internal taxes or charges on products; and Article III:4 then deals with taxes and regulations not covered by Article III:2.

Under GATT Article III:8(b), the prohibitions in GATT Article III do not apply to payments of subsidies “exclusively to domestic producers, including payments to domestic producers derived from the proceeds of internal taxes or charges applied consistently with the provisions” of Article III.³¹ The single decided case (*Canada – Periodicals*) suggests that, in the case of government procurement, GATT Article III does not provide a safe haven for paying higher prices to domestic producers.

The Appellate Body has explained that the broad and fundamental purpose of Article III is to avoid protection in the application of internal tax and regulatory measures. In decided cases, the article has been strictly applied.

F. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs)

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) was meant to close gaps in the way intellectual property rights (IPRs) are protected around the world. In international trade negotiations, IPRs have become an important issue since they are closely related to technology transfer. Strong IPR protection has the potential to stimulate technology innovation but can also hinder technology transfer. Some developing countries have proposed compulsory licensing regimes as a way of improving access to green technology. One argument for compulsory licensing is that emission controls have external benefits that cannot be captured by adopting firms. Hence, in the absence of compulsory licensing at reasonable royalty rates, green equipment and process technology will be seriously underutilized. Needless to say, the United States and other advanced countries are vehemently opposed to compulsory licensing regimes, whatever the justification.

Cosbey (ed. 2008) has argued that the TRIPs agreement can foster technology transfer through so-called “TRIPs flexibilities” -- provisions that allow for certain limitations and exceptions to IPR protection. Many technology companies take exception to this interpretation. In the absence of prior agreement among WTO members, compulsory licensing might well spark a good deal of counterproductive friction. The subject is clearly grist for negotiation within the WTO framework.

G. Agreement on Trade-Related Investment Measures (TRIMs)

The Agreement on Trade-Related Investment Measures (TRIMs) applies only to measures that affect trade in goods. Recognizing that certain investment measures can restrict and distort trade,

³¹ GATT Article III:8(b). The meaning of “domestic producers” in terms of corporate ownership and control has not been clarified in GATT/WTO dispute settlement.

the TRIMs text states that no contracting party shall apply a measure inconsistent with GATT Articles III (national treatment) or XI (quantitative restrictions). The agreement lists TRIMs that would be inconsistent with these articles in its annex. The illustrative list includes measures which require purchase or use of local procurement by an enterprise (so-called “local content requirements”) or which restrict the volume or value of imports such an enterprise can purchase or use to an amount related to the level of products it exports (so-called “trade balancing requirements”).³²

H. General Exceptions (Article XX)

A measure violating any provision of the GATT can be excused if it qualifies for an exception under Article XX. The Appellate Body has explained that the exceptions are “limited and conditional,” and that the analysis is two-tiered. When a measure is provisionally justified by one of the specific exceptions, the panel will then determine whether the measure meets the legal standard set forth in the chapeau of Article XX.³³

Relevant to climate change, the subsections of Article XX permit otherwise inconsistent trade measures if they are “necessary” to protect human, animal or plant life or health (Article XX (b)) or if they conserve exhaustible natural resources (Article XX (g)). Both subsections appear to cover measures designed to control GHG emissions. While the Appellate Body rulings in previous cases show considerable sympathy with environmental concerns, the decisions are made case-by-case; they depend on the particular facts and circumstances; and the rule of *stare decisis* does not strictly apply.

A measure that is provisionally justified by one of the GATT Article XX specific exceptions is then further evaluated to see whether it is consistent with the chapeau of Article XX, the most serious barrier to the invocation of Article XX. The chapeau states that recourse to a GATT exception for challenged measures is “[s]ubject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures....” The Appellate Body’s interpretation of the standards set forth in the chapeau may vary as between different subsection paragraphs in Article XX. However, whatever paragraph is invoked, the burden of proof is on the defendant government.

IV. Looming “Train Wreck”

Given the previous discussion, it seems almost certain that existing WTO rules system will conflict with future climate policies unless preemptive actions are taken. A train wreck could

³² The full text of the TRIM agreement is available at http://www.wto.org/english/docs_e/legal_e/18-trims.pdf

³³ The full text of the GATT Article XX is available at http://www.wto.org/english/docs_e/legal_e/gatt47_02_e.htm.

occur mainly because the rules of the world trading system, with very limited exceptions, do not delve into process and production methods (PPMs), whereas GHG controls –are all about PPMs.³⁴ To refresh readers, Table 1 summarizes climate policy measures that may run afoul of WTO rules.

We do not place great stress on the legal form of a future international climate agreement, whether a treaty or a political accord or something in between. However, we think that the sense of obligation must be roughly equivalent among major emitters. Otherwise recourse to trade remedies will be much more likely. Equivalence was not achieved at Copenhagen and is unlikely to be achieved in the near future. The disappointing outcome of Copenhagen and the dim prospects for a meaningful post-Kyoto pact increase the probability of a train wreck.

Everyone sympathizes with the necessity of action on climate change and a structural shift towards a low-carbon society. However, the sense of unfairness -- in terms of unequal effects and discriminatory application -- will be huge when some countries put GHG controls in place but others do not. People who pay higher electric bills, and industries that face stringent GHG controls, will feel unfairly burdened when elsewhere in the world people and industries are emitting GHGs on a business as usual (BAU) path, and new coal-fired power plants are commissioned every week. Faced with this discontent, governments will face increasing pressure to find ways to level the playing field and prod reluctant countries to action.

To avert conflict, some observers have expressed hopes that the climate regime itself would act multilaterally to create norms for the intersection between the trading system and GHG controls. In fact, discussions were held within the UN climate talks. However nothing came of the discussions and the existing weak compliance mechanisms within the UNFCCC are not designed to deal with trade issues. Given extreme differences between countries in Copenhagen, and the inability of the UNFCCC process to resolve core climate issues, we see little chance that the UN climate talks will define a trade framework that is broadly satisfactory to WTO members.

What does this mean? In our view, the WTO system should now take the initiative, identify potential areas of conflict, and attempt to solve them either as a group or one by one.

Table 1. WTO rules that may conflict with climate measures

Climate Policy Options	Relevant WTO Rules
<u>In General</u>	GATT Articles I, III, and XX
<u>Public Support</u>	

³⁴ PPMs are a particularly thorny issue since there is huge disagreement among members on how to interpret non-product related PPMs which do not leave trace in the final product within WTO rules.

Direct subsidies	ASCM
"Buy national" procurement	TRIMs, GATT Article III / Article XI
Loan guarantees	ASCM
<u>Border Measures</u>	
Duties and charges on imported products	GATT Article II/ Article III
Technical standards affecting internal sales	TBT Agreement, GATT Article III/ Article XI
Import bans	GATT Article XI

V. Looking Ahead: Ways to Avoid a Train Wreck

The WTO has long acknowledged the potential for conflict between its rules and climate policies. However, WTO leaders have been reluctant to confront the challenges that are now plainly on the horizon. Pascal Lamy, Director-General of the WTO, has repeatedly expressed his hope that an international agreement on climate change will be forged before the WTO begins work on the WTO compatibility of trade measures undertaken in the name of climate change. After Copenhagen results, this hope seems forlorn. Lamy has asserted that WTO members do not want a separate Geneva-based WTO negotiation on permissible trade-related climate measures. After Copenhagen, that assertion is being questioned. National and sub-national legislation with major trade implications now seems destined to run far ahead of international talks.

In our view, the WTO no longer enjoys the luxury of waiting for the UNFCCC to pronounce. A “head-in-the-sand” approach practically ensures that significant national and sub-national legislation will be enacted without much guidance from the WTO system—even though, in his recent statement, Lamy said, “the more we move toward a multilateral framework on climate change, the more unilateral trade measures will be difficult to explain.”³⁵ Once they are enacted, national and sub-national laws and regulations will be hard to change. Vested interests will quickly build. In our view, WTO leaders should grasp the climate file now, while national, state, provincial and municipal legislators are still in the midst of their own deliberations. With this background in mind, we turn now to several options for managing future conflict. Some of options are mutually exclusive, but some could be pursued on parallel tracks.

A. Dispute settlement (inside the WTO)

A straightforward way to determine whether disputed trade measures in support of GHG emission controls are compatible with WTO agreements is simply to let the WTO judicial process run its course. Eventually, following this approach, the Appellate Body will establish a record of decided cases that define the contours of existing WTO obligations.

While this is probably the course of least resistance, it has two important shortcomings. If the Appellate Body is lenient on trade-related climate measures, giving excessive scope to the use of subsidies and barriers through a liberal interpretation of Article XX, it could open the door to opportunistic rent-seeking and protection on a vast scale. On the other hand, if the Appellate Body is strict, some countries and many zealous environmentalists will ask why the WTO is blocking GHG controls designed to save the planet. Either way, the case-by-case approach will put great pressure on the political legitimacy of the WTO system.

Another important shortcoming is that the case-by-case approach will take years before clear guidelines become apparent. A big WTO case can easily take three years to run the full course -- from consultations, to a panel decision, and finally a ruling by the Appellate Body. Delay carries

³⁵ See Lamy Sees No Need For WTO Reforms To Tackle Climate Change Issues. 2009. *Inside US Trade*. (December 4). (Accessed via subscription.)

a price. The guidance that the WTO provides for the conduct of world trade largely operates through the self-discipline of legislators and administrators at all levels of government – national, provincial, state, and municipal. When rules are clear, the great majority of officials pay close attention. When the rules are murky – as they are today in multiple intersections between climate and trade – self-serving interpretations will inevitably generate major, and in many cases, unnecessary conflicts. Trade battles could become a distraction from collective efforts to fight the common enemy, climate change.

B. Code approach (inside and outside the WTO)

Key WTO members might negotiate a new code as a plurilateral agreement under Annex 4 of the WTO agreement. The code would create policy space for climate measures that are imposed in a manner broadly consistent with core WTO principles -- even when a technical violation of WTO law occurs. Measures that conform to this code would not be subject to challenge in WTO dispute settlement by governments subscribing to the code. Although such a code would require consensus of all WTO members to be formally added to the WTO agreement, this consensus might be politically possible because it would not limit the rights of non-subscribing WTO members. Our book outlines possible elements of a new code in detail (Hufbauer, Charnovitz, and Kim 2009).

However, if negotiating a code as a WTO plurilateral agreement proves politically impossible, because non-subscribing members fear the precedents that would be set, then a group of like-minded member governments could negotiate a code outside the WTO. The advantage of acting outside the WTO is that non-participating countries could not block the negotiations. Of course, WTO dispute settlement mechanisms would not be available for enforcement of an extra-WTO code. But that might not be a serious disadvantage because other forms of dispute settlement could be adopted.

As a plurilateral agreement inside or outside the WTO among like-minded countries, the code would not apply to countries that did not subscribe to it. The purpose of such a code would not be to regulate legal relationships between code members and non-members, but rather for participating governments to agree in advance to a framework for trade-related climate measures in order to head off disputes among the signatory governments. The code approach would minimize the risks for exports of participating countries, and might to some degree limit the extent of subsidization through free allocations and exemptions.

WTO members might be asked to approve a waiver to WTO obligations for trade commitments written in a climate code. A waiver, unlike a revision of the text, does not require a consensus among WTO members, but it does require approval from at least three-quarters of members. Whether this route has much promise largely depends on the extent of overlap between signatories to the climate code and the WTO membership. If a significant number of WTO members disagree with the content of a climate code, the prospects of a waiver seem slight.

Whatever its legal standing, the code approach has drawbacks. To maximize its effectiveness, the code should include the major emitting countries: the United States, the European Union, Japan, Brazil, India and China. This would not be an easy task, owing to the large difference of

opinion on appropriate GHG controls between developed and developing countries. In practical terms, a code that emphasizes sector standards and implicit carbon pricing might start out with very limited membership, perhaps just the United States, the European Union, Japan, and a few other advanced countries. Under this approach, the existing forums like the Group of 20 or the Major Economies Forum (MEF) that are currently being discussed as alternatives to a problematic consensus procedure of UNFCCC could be used.

In response, developing countries, speaking under the auspices of the Group of 77, might write their own code for climate and trade measures. Predictably, a G-77 code would emphasize the cumulated historical record of national emissions and current per capita levels as a basis for imposing trade restraints. The result of two conflicting codes could be a huge split between WTO members, with considerable damage to the world trading system.

C. Arbitration forum for private firms under WTO rules

The World Trade Organization, as an agreement among governments, does not open its dispute settlement mechanism to private firms. A dispute can only be brought by one member country against another member country (with provision for participation by third party members). Yet the “bottom up” scenario for writing climate rules is fraught with danger for private companies.

Here is a suggestion. With financial support from the World Bank, the WTO could create a forum of retired Appellate Body members. The forum would be open for private companies to seek advisory opinions as to the consistency of national, provincial, state and municipal climate measures with the substantive tenets of WTO trade rules. For the purpose of these advisory opinions, the fact that a national agency or sub-national government is not subject to WTO rules would be disregarded. An advisory opinion would not, of course, prejudice future decisions of WTO panels of the Appellate Body. Nor would an adverse advisory opinion carry a trade penalty. However, it would provide guidance, not only for the measure under consideration, but more importantly for similar measures under consideration in other jurisdictions.

D. A “Green Round” within the WTO

After the Doha Round has been concluded, or perhaps while the Doha talks are still underway, the WTO could launch a successor or parallel “Green Round”. One core element is already on the table: trade barriers that hinder the global dissemination of low-carbon energy technologies and associated services. Recognizing the importance of improving market access to environmental goods and service (EGS), the original Doha Ministerial Declaration in 2001 called for negotiations on “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.”

However, soon after it commenced, the Doha Round, ran into difficult terrain. The differences between WTO members are well known and need not be rehearsed here. However, some critics, such as Subramanian and Mattoo (2009) urge that the Doha Round should now be scrapped because the prospects are too dismal and the payoff is too small. Contrary to the Doha doomsayers, Hufbauer, Schott and Wong (2010) argue that the potential gains from what

members have already agreed are significant, but the current Doha package is neither ambitious enough nor balanced enough to garner the necessary political support in major economies. They argue that the Doha package should be “topped up” to harvest the potential gains and ensure the viability of the rules-based multilateral trading system.

However, given the uncertainties, it might be worthwhile to launch a “Green Round” either as a device to push the Doha talks over the finish line or in parallel with ongoing negotiations. In fact, the idea of a Green Round was advanced 16 years ago by Daniel Esty, now a law professor at Yale University. In his 1994 book *Greening the GATT*, Esty proposed to embrace environmental issues in the agenda of the multilateral trading system. Speaking at Yale University in 2007, Director-General Lamy, commended Esty’s proposals and pointed out that the Doha Round was the first to include an “environmental or green chapter.”³⁶

In a very small step towards a Green Round, at least one important official has sought to move on EGS negotiations before the rest of the Doha package. US Trade Representative Ron Kirk said that the United States has been talking with Canada, the European Union and Australia about eliminating tariffs on some green technologies including solar, wind and related energy technologies to spur their use, implying that an environmental deal would not have to wait for the completion of the Doha Round.³⁷ The threshold challenge is that internationally agreed definitions for environmental goods and services do not yet exist. Filling the vacuum, the OECD, APEC, and World Bank have drawn up their own lists. Drawing on these contributions, the Special Session of the WTO Committee on Trade and Environment (CTE) has tried to nail down an agreed list. Progress has been made on environmental services, but an agreed definition of environmental goods remains elusive.

Lower barriers to EGS trade would obviously contribute to reducing GHG emissions, but they would also have commercial advantages for both developed and developing country exporters. China, for example, is the top exporter of wind turbine towers, static converters, solar batteries for energy storage in off-grid photo voltaic systems and other items. Mexico is the top exporter of a product line that covers solar water heaters. Although tariff rates are generally low in most developed countries, they are still high in many developing countries. Equally important, the United States and the European Union need to concede that ethanol and other biofuels belong on the free trade agenda.

Using a combined schedule of OECD, APEC, and World Bank lists of environmental goods that covers 211 products at the HS six-digit level, Hufbauer and Kim (2010) estimated that tariff elimination on environmental goods would increase the world imports of environmental goods by about \$56 billion or around 12 percent of current world total imports of environmental goods. The World Bank (2010) likewise found that eliminating tariff and nontariff barriers on clean

³⁶ See “The “greening” of the WTO has started — Lamy” October 24, 2007, WTO news (available at http://www.wto.org/english/news_e/sppl_e/sppl79_e.htm)

³⁷ See “U.S. Seeks to Push Ahead With Trade Deal on Green Technologies,” Mark Drajem, *Bloomberg*, April 26, 2010 (available at <http://www.businessweek.com/news/2010-04-26/u-s-seeks-to-push-ahead-with-trade-deal-on-green-technologies.html>)

energy technologies -- cleaner coal, plus wind power, solar photovoltaic, and energy-efficient lighting—could increase trades volume by 14 percent in 18 high-emitting developing countries.

Lowering EGS barriers can also be a regional goal. For example, discussions are underway among APEC and East Asian countries. A Global Agenda Council formed by the World Economic Forum has proposed a Sustainable Energy Free Trade Area (SEFTA) within the G-20. The SEFTA would aim at removing all subsidies on fossil fuels, and eliminate tariffs and taxes on clean energy products (World Economic Forum 2010).

Beyond the obvious EGS agenda, a Green Round could seek to revise the rules in the ASCM to address GHG offsets and other public financial supports for clean energy. It could take up the problems created by public and private green labels. More ambitious, the Green Round might establish a template for permissible border adjustments. Later we take up these topics as stand-alone subjects.

E. “Peace clause” in national legislation and WTO cases

Leading WTO members should consider time-limited “peace clauses” both in national climate legislation and in exercising WTO countermeasures. This would give breathing space for a defined period of time – at least three years -- while UNFCCC and WTO negotiators make headway on establishing multilateral rules.

The great advantage of a peace clause is that it buys time. One disadvantage, with the WTO itself experienced with respect to the agricultural peace clause adopted in the Uruguay Round, is that negotiations might not move with much energy or speed. A second disadvantage is that, during the peace clause period, the urgency of limiting GHG emissions might be diluted. However, if the peace clause is not too long, and if severe border measures are scheduled to take effect when it expires, the approach might concentrate the mind of negotiators.

F. More accurate measurement and reporting of fossil fuel subsidies

The WTO has established considerable expertise in measuring subsidies, both in agriculture and industry. One strand of its expertise owes to a string of cases decided by GATT panels and the WTO Appellate Body; another strand owes to the pioneering work of Australian scholars and officials in measuring agricultural subsidies.

Our suggestion is to bring this expertise to bear on more accurately measuring national fossil fuel subsidies. These have been rightly singled out for action by G-20 leaders, but current measurements are quite shaky. With financial assistance from the World Bank or other sources, the estimates could be significantly improved. As a first and mild corrective step, the WTO could launch a biennial “name and shame” report, based on these findings.

As stronger medicine, WTO members might agree that fossil fuel subsidies can be counted both in national CVD determinations and in WTO cases under the ASCM. We are not suggesting that fossil fuel subsidies could provide stand-alone grounds in any of these disputes. However, if

penalty duties or alternative countermeasures were authorized in response to other subsidies, fossil fuel subsidies could be taken into account by way of a “topping up” calculation.

G. Measurement and reporting of “green subsidies”

As discussed earlier, governments have already provided or are considering various financial supports -- such as offsets, direct subsidies, tax incentives and government procurement -- to advance the green economy. The WTO Secretariat could launch a biennial report to measure these supports. The report would summarize what’s happening and evaluate the impact of green subsidies on trade and investment, concentrating in the first instance on big emitting countries. By itself, the report will improve understanding among member countries. Eventually it could be used as the basis for establishing WTO guidelines.

H. Defining rules for green labels

As mentioned earlier, labeling schemes are becoming very popular as countries are adopting national policies to promote the use of energy efficient products. Moreover, household and business consumers are increasing their demands for eco-friendly products. Many countries have already adopted mandatory or voluntary labeling schemes and many companies have joined them. Countries and companies will increasingly require that imports be accompanied by corresponding certificates or labels.

Recognizing the complexity and diversity of eco-labeling schemes, the WTO has directed its two committees -- the Committee on Trade and Environment (CTE) and the Technical Barriers to Trade (TBT) Committee -- to work on related issues.³⁸ This work could be accelerated. In response to the rapid proliferation of eco-labeling schemes, the WTO could task a new Working Party to define internationally acceptable practice for certifying that green labels do not discriminate against imports. This work could be conducted in collaboration with the

³⁸ For voluntary environmental labeling schemes, the TBT Agreement contains a “Code of Good Practice for the Preparation, Adoption and Application of Standards” which states: “A. For the purposes of this Code the definitions in Annex 1 of this Agreement shall apply. B. This Code is open to acceptance by any standardizing body within the territory of a Member of the WTO, whether a central government body, a local government body, or a non-governmental body; to any governmental regional standardizing body one or more members of which are Members of the WTO; and to any non-governmental regional standardizing body one or more members of which are situated within the territory of a Member of the WTO (referred to in this Code collectively as “standardizing bodies” and individually as “the standardizing body”). C. Standardizing bodies that have accepted or withdrawn from this Code shall notify this fact to the ISO/IEC Information Centre in Geneva. The notification shall include the name and address of the body concerned and the scope of its current and expected standardization activities. The notification may be sent either directly to the ISO/IEC Information Centre, or through the national member body of ISO/IEC or, preferably, through the relevant national member or international affiliate of ISONET, as appropriate.”

See Annex 3 of the TBT agreement available at http://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm#annexIII.

International Organization for Standardization (ISO).³⁹ In parallel, WTO members could discuss ways to help developing countries build capacity for their own eco-labeling systems and for evaluating foreign systems applied to their exports.

I. Clearing house for global companies

Many global companies already participate in voluntary reporting with respect to their climate measures. The largest clearing house for corporate information is the Carbon Disclosure Project (CDP), an independent not-for-profit organization. About 2,500 organizations in some 60 countries now measure and disclose their GHG emissions and climate change strategies through CDP – by completing the questionnaire using the online response system.

The WTO could supplement this effort by asking member governments to require companies of a certain size to complete the CDP questionnaire, by improving the questionnaire to cover missing issues, and by auditing a sample of the submissions. This work could eventually lead to the creation of a “code of good practice” for global firms.

One related thought is that the WTO members could agree that small emitting countries that, on a national basis, participate in a reporting initiative akin to the CDP are immune from trade actions for a certain period – perhaps 5 years.

J. Carbon Added Tax

The idea of adopting a carbon added tax (CAT) system was floated a while back. Among proponents of the idea, one prominent figure is Joseph Stiglitz, Nobel laureate in Economics and professor at Columbia University. He supports the idea of an international agreement which allows countries to impose a carbon tax at an agreed rate, reflecting the global social cost of GHG emissions.⁴⁰ While this idea might be the simplest way to address climate change, it seems far-fetched both because countries are not likely to agree on the right carbon price and because national legislatures will not delegate a question of this importance to a supra-national authority.

Ignoring these practical objections, let’s assume for the moment that a CAT is adopted. The WTO would then need to clarify practical difficulties involving the imposition of the tax on traded goods and services. For starters, is the CAT border adjustable? Under existing WTO rules, governments can impose product taxes on imports and rebate these taxes on exports.⁴¹ However, if the CAT is based on the GHG emitted in making a product rather than the product itself, border adjustments might not be permitted under existing WTO rules. If that difficulty is overcome, the next obstacle is how far back in the production process should GHG emissions be

³⁹ ISO has developed standards called the ISO 14000 series on environmental management which cover standards for environmental management system certification, environmental auditing, life-cycle analysis, and eco-labeling.

⁴⁰ See “Carbon-taxing the rich”, Joseph Stiglitz, *Guardian*, 7 December 2007 (available at <http://www.guardian.co.uk/commentisfree/2007/dec/07/carbontaxingtherich>) .

⁴¹ Parallel rules remain to be written for trade in services.

traced? And who does the tracing, especially for products made abroad. It's evident that thorny questions would arise in the implementation phase of the CAT.

K. World Environment Organization

In March 2010, Achim Steiner, executive director of the UN Environment Programme (UNEP), mentioned the possible establishment of a new World Environment Organization (WEO) among reform options. He signaled that the WEO would be a global environmental watchdog modeled on the lines of the World Trade Organization (WTO).⁴²

The idea of a WEO is not new; it was proposed back in the early 1970s when environmental issues started to gain attention (Charnovitz 2002). The foundation argument is that the WTO is not well-positioned to balance trade and environmental principles, since its expertise is trade not environmental. Building on this theme, Esty (1996) explored the idea of forming a Global Environmental Organization (GEO) which would provide a counterweight to the WTO.

Esty (1996) has pointed out that, to environmentalists, “protection” is the ultimate good while to free traders, “protection” is the consummate evil. Similarly, Charnovitz (2003) argued that climate change presents an extreme case of market failure – namely, the failure to build the damage done by GHG emissions into the prices of goods and services. A classic role for governments is to correct market failures. Normally, however, governments want great flexibility in the choice of national instruments to correct market failures, because they need to balance the economic characteristics of alternative measures against their political acceptability. By contrast, the trade rules embodied in the GATT and the WTO presuppose a world of market economies, and focus their disciplines not on market failures but on government failures that lead to distortions with the flavor of mercantilism and protectionism.⁴³

⁴² See “UN proposes WTO-style environment watchdog,” James Murray, *Business Green*, March 1, 2010 (available at http://www.centerforunreform.org/system/files/GEG_Biermann.pdf)

⁴³ To be sure, countervailing duties and anti-dumping duties are aimed at market failures, but these are exceptions in the overall system of GATT and WTO rules.

VI. Concluding Words

Climate change and international trade intersect in both positive and negative ways. In this paper, we discussed potential collisions between climate change policy options and WTO rules, and explored possible ways to avoid a train wreck. One simple but important point of this paper is that international trade can do good things for minimizing climate change -- perhaps in better ways than other options. The removal of subsidies to fossil fuels, reinforced by new trade rules, could be an enormous help. Trade liberalization in environmental goods and services would promote the rapid dissemination of green technology. These are fruitful subjects for discussion and negotiation under the auspices of the World Trade Organization.

In addition to these positive steps, WTO members should squarely face the prospect of a train wreck between established rules of the world trading system and new measures under active consideration that could significantly curtail trade and investment in the name of curbing GHG emissions. Rather than stand on the sidelines and watch the WTO and climate systems collide, WTO members should actively seek reconciliation.

In wrapping up this paper, we list several questions to stimulate discussion:

- Has the WTO's wait-to-see position changed since Copenhagen?
- Do WTO members think the possibility of a train wreck should be taken seriously, or will the trade and climate systems work together with minimal friction?
- If there is a consensus that a train wreck is a real possibility within five or ten years, should the WTO take preemptive action now??
- Would putting climate issues on the WTO table at this time hinder the successful conclusion of the Doha Round, or promote the successful conclusion?
- Will clear WTO guidelines help shape sub-national and national legislation in ways that minimize friction with the trading system?
- Which listed options are most feasible over the next two years?
- Which listed options are non-starters?
- Has the paper overlooked important options? What are they?
- To successfully promote any option, is the concurrence of big emitting countries essential?
- Or can smaller emitting countries and the Secretariat itself get the ball rolling?

Appendix A. WTO Rules that Bear on Climate Policies

A. Countervailing duties, anti-dumping duties, and “carbon free riding”

Countries that take action on climate change will resent “carbon-free riding” by countries action that do not bear their fair share. Within the GATT context, it is controversial whether government inaction with respect to adequate GHG control programs can be characterized as a public subsidy or as environmental dumping. The first characterization points to countervailing duties; the second characterization points to anti-dumping duties.

A countervailing duty (CVD) is a penalty tariff imposed on imports designed to offset the competitive effect of a foreign subsidy. CVD actions are national decisions; however, the WTO Agreement on Subsidies and Countervailing Measures (ASCM) provides guidelines for national authorities. The ASCM establishes four basic prerequisites to a CVD action: the public subsidy must take the form of a “financial contribution”; the financial contribution must provide a benefit; the benefit must be specific to a firm or industry; and subsidized imports must cause or threaten material injury to domestic firms that make “like products”. Some commentators have proposed applying CVDs on carbon-intensive imports as a “stick” against “carbon free riding.” The problem with this formulation is that free riding on carbon restrictions is not a subsidy, as currently defined by the ASCM, both because the absence of government regulation is not the legal equivalent of a financial contribution, and because the absence of government regulation does not necessarily provide a benefit to exempted firms.

As with CVDs, anti-dumping actions are national measures; however, the WTO Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 (known as the ADP) provides guidelines. Before AD tariffs are applied, it must be shown that imports are priced below “normal value” and that the imports cause or threaten material injury to domestic firms. Under the ADP, as currently written, the failure to internalize the cost of carbon emissions, does not give rise to a finding that the price is lower than “normal value”. The entire ADP text on “normal value” is cast in terms of market prices and market costs, not in terms of externalities that are not properly reflected in prices and costs.

In conclusion, it would take a major rewrite of the ASCM and the ADP before either CVD or AD penalty tariffs could be applied in confidence to “carbon free-riding” imports.

B. Agreement on Subsidies and Countervailing Measures (ASCM)

It is highly problematic whether CVD or AD penalty duties can be imposed by importing countries to “correct” for the absence of carbon controls on the part of exporting countries. But that is not the end of the subsidy story in the nexus between climate policy and trade rules.

In the multilateral trading system, the Agreement on Subsidies and Countervailing Measures (ASCM) provides the basic guide. Climate control policies often envisage long-term free allocations and exemptions as a cushion for energy-intensive and carbon-intensive industries (including agriculture) – both when they sell at home and when they sell abroad.

Such policies raise questions when they intersect with the ASCM. Does the free allocation of emission allowances to domestic firms entail a subsidy? What about the wholesale exemption of an emitting sector – livestock to take the paramount example? And what about the rebate of allowances upon the export of a carbon-intensive product? These questions have no obvious answers in the WTO text, and so far WTO jurisprudence has not enlightened us (Lodefalk and Storey 2005).

Recall that the ASCM defines a “subsidy” in terms of “financial contribution” by the government and “benefit” to the recipient. The granting of an emission allowance is intended as a benefit and surely is one. The same is true of the wholesale exemption of a sector. So the key question is whether such the grant or exemption is a financial contribution. The ASCM definition of financial contribution is broad and includes, among other illustrations, “a direct transfer of funds” and cases where “a government provides goods or services other than general infrastructure.”⁴⁴ A financial contribution also exists when revenue that is “otherwise due is foregone or not collected.”⁴⁵ Even though the definition is broad, none of the examples in the ASCM text clearly matches an emission allowance or exemption, since these benefits are conferred neither as cash nor as goods and services. Rather the allowances and exemption are intangible property right, akin to zoning permits. The closest match in the ASCM text is to “revenue foregone”, but even that analogy supposes that the natural order in the realm of climate change is to tax all emissions or to auction all permits. Since climate policy is now in its infancy, that conception is not easy to justify; nor have comprehensive taxes or cash permits been characteristic in other realms where the government has allocated scarce resources, such as radio spectrum or landing slots.

Perhaps a distinction should be made between allowances that can be sold for cash and permits or exemptions that can only be used for specific activities. If this distinction is made, the former would be characterized as subsidies and the latter not. However, there are good policy reasons for defining all allowances and exemptions as subsidies. Otherwise governments in the carbon-conscious world of the future will be tempted to confer aid on favored industries or agriculture by assigning rights that escape the definition of subsidy. That process, writ large, will distort both production and trade. Moreover, it will work against the control of emissions in the least costly manner, since favored products will neither internalize the economic cost of emissions control nor incur the political cost of the designation “subsidy recipient”.

Another question is whether the exemption of exported products from emission taxes or permits, or a similar remission comports with the ASCM. If emission taxes are actually imposed on identifiable products sold in the domestic market, then a border adjustment falls squarely in the terms of the ASCM as the exemption or remission of an indirect tax. Moreover, under GATT Article III, an equivalent tax could be imposed on imports of like products. However, few emissions control systems are destined to operate in this manner. Instead, permits will be required of activities that simultaneously produce a range of products, and the number of permits

⁴⁴ ASCM, Article 1.1(a)(1)(i), (iii). Note that government grants for general infrastructure, such as a new electrical grid, are not treated as financial contributions under the ASCM.

⁴⁵ ASCM, Article 1.1(a)(1)(ii).

will be tailored to the emissions footprint of individual firms. That factual pattern will make it difficult to trace permit requirements to identifiable products, whether imported or exported. Accordingly, it is unclear with the ASCM or GATT Article III could be squared with border adjustments on exports and imports. In a moment, we will return to the Article III issues.

C. Agreement on Technical Barriers to Trade (TBT)

The scope of the TBT agreement includes both mandatory and voluntary measures. Mandatory measures are termed “technical regulations” and are defined as any measure that “lays down product characteristics or their related processes and production methods.”⁴⁶ Technical requirements related to energy efficiency and carbon emissions typically depend on process methods rather than on product characteristics. While similar legal principles apply to both mandatory and voluntary measures under the TBT agreement, a distinction exists on the level of obligation. For mandatory regulations, members have a positive obligation to ensure that their regulations are consistent the provisions of the TBT Agreement. With regard to voluntary standards, members are only required to take “reasonable measures” (WTO/UNEP 2009).

In decided cases, the Appellate Body has not examined the language concerning “related processes and production methods.” It seems likely that the term “related” will be stretched to include the energy used or the carbon emitted in making a product, but no case is yet on point. In fact, the European Union has urged that its eco-label scheme -- a voluntary, government-administered labeling scheme which is based on process and production methods (PPM) -- is covered by the TBT agreement and does not constitute a *per se* violation. However, some developing countries have argued that non-product based measures, such as the eco-label, are not covered by the TBT agreement (Vranes, forthcoming). If a regulation about the energy footprint of a product is not covered by the TBT agreement, it would be covered by GATT Articles III:4 or XI, and these provisions strictly limit discrimination against imports.

For the purposes of this paper, we assume that the Appellate Body will decide that energy and carbon performance measures are covered by the TBT agreement, if only because non-coverage would create a major gap in TBT disciplines. If that assumption is correct, then a key question in a WTO dispute concerning the reasonableness of a measure is whether the measure was based on an international standard. The Agreement favors technical regulations based on international standards: they are “rebuttably presumed not to create an unnecessary obstacle to trade.”⁴⁷ However, developing country WTO members are not expected to use international standards that “are not appropriate to their development, financial and trade needs.”⁴⁸

If a domestic energy or carbon performance standard is not based on an international standard, then the domestic standard is subject to the TBT requirement that any application to imports

⁴⁶ Agreement on Technical Barriers to Trade, Article 1.2 and Annex 1, paragraph 1. The TBT agreement does not apply to sanitary or phytosanitary measures (see Article 1.5).

⁴⁷ TBT agreement, Articles, 2.4, 2.5.

⁴⁸ TBT agreement, Article 12.4.

“shall not be more trade-restrictive than necessary to fulfil a legitimate objective”.⁴⁹ This language creates a wide area of potential dispute since it is not self-evident that restrictions applied to imports will in fact promote energy efficiency or avert carbon leakage.

D. General Elimination of Quantitative Restrictions (GATT Article XI)

GATT Article XI prohibits the imposition of quotas, import or export licenses, or other measures on trading partners unless they fall into one of the exceptions listed in paragraph 2.⁵⁰ GATT Article XI:1 states: “No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party....”

As mentioned earlier, if a regulation based on the energy footprint of a product is not covered by the TBT agreement, it would be covered by GATT Articles III:4 or XI. Pauwelyn (2009) noted that if any restriction or regulation is applied to both imported products and like domestic products, then in principle it should fall under GATT Article III. The restriction would likely be acceptable under GATT Article III if it did not discriminate against imports. However, measures which are applied to imports based on process and production methods, not on product characteristics, would fall outside the scope of GATT Article III and instead would very likely be prohibited under GATT Article XI (Pauwelyn 2009).

A country may consider a ban or quantitative restrictions on imports from countries without strong GHG mitigation policies, characterizing them as "dirty" products. Decisions in previous cases suggest that WTO panels are disposed to interpret Article XI:1 broadly to include almost all types of import restriction, and these precedents cast doubt on a “dirty” product distinction between WTO members.

E. National Treatment (GATT Article III)

The fundamental national treatment principle in GATT Article III holds that an imported product is to be treated no less favorably than a like domestic product. This purpose is carried out through two principal provisions: the first sentence of Article III:2 deals with internal taxes or charges on products; and Article III:4 then deals with taxes and regulations not covered by Article III:2.

⁴⁹ TBT agreement, Article 2.2.

⁵⁰ Article XI:2 provides a safe harbor for countries to apply quantitative restrictions on imports or exports under certain circumstances which are: “(a) export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party; (b) import and export prohibitions or restrictions necessary to the application of standards or regulations for the classification, grading or marketing of commodities in international trade; (c) import restrictions on any agricultural or fisheries product, imported in any form, necessary to the enforcement of governmental measures...” None of these exceptions seems to apply to carbon footprint restrictions.

The first sentence of GATT Article III:2 states: “The products of the territory of any contracting party imported into the territory of any other contracting party 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.” The scope of the first sentence of Article III:2 covers not only taxes but also “other internal charges of any kind,” including those collected at the border.

GATT Article III:4 states: “The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use.” In the *European Communities (EC) – Asbestos* case, the Appellate Body explained that “like” in Article III:4 has a “relatively broad product scope” and is broader than “like” in the first sentence of Article III:2. Moreover, the likeness test is fundamentally a determination of the nature and extent of a competitive relationship in the marketplace between imported and domestic products.⁵¹

Under GATT Article III:8(b), the prohibitions in GATT Article III do not apply to payments of subsidies “exclusively to domestic producers, including payments to domestic producers derived from the proceeds of internal taxes or charges applied consistently with the provisions” of Article III.⁵² In the *Canada – Periodicals* case, the Appellate Body ruled that Article III:8(b) only covers the payment of subsidies that involve “the expenditure of revenue by a government” and suggested that a reduction in government fees or tax preferences would not be covered by this provision.⁵³ This suggests that, in the case of government procurement, GATT Article III does not provide a safe haven for paying higher prices to domestic producers.

The Appellate Body has explained that the broad and fundamental purpose of Article III is to avoid protection in the application of internal tax and regulatory measures. In decided cases, the article has been strictly applied. For example, with respect to energy efficiency standard, an old dispute tells an interesting story. In *United States – Automobiles*, the GATT panel examined three US measures on automobiles: the luxury tax on automobiles, the “gas guzzler” tax on automobiles, and the Corporate Average Fuel Economy (CAFE) regulations. Whereas the panel found that the luxury tax and the gas guzzler tax were consistent with Article III:2, it found that CAFE regulations were inconsistent with GATT Article III:4 because they discriminated against imported products by applying a separate fleet accounting system on imported cars on the basis of factors unrelated to product characteristics. Replying to the US defense of CAFE regulations under Article XX, the panel found that the measure was not justified under Article XX (g)

⁵¹ Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted April 5, 2001, paragraphs 98–100, 103.

⁵² GATT Article III:8(b). The meaning of “domestic producers” in terms of corporate ownership and control has not been clarified in GATT/WTO dispute settlement.

⁵³ Appellate Body Report, *Canada – Certain Measures Concerning Periodicals*, WT/DS31/AB/R, adopted June 30, 1997, pp. 34–35.

because the separate fleet accounting method was not “primarily aimed at” the conservation of exhaustible natural resources. This report was never adopted by the GATT. However, it is easy to envisage circumstances where the application of energy or carbon performance standards to imports would be less favorable than their application to at least some domestic producers.

Border adjustment mechanisms that are currently discussed in some countries – notably the United States -- could have implications under GATT Article III which prohibit an imported product from being treated less favorably than a like domestic product. For example, the Waxman-Markey bill establishes an international reserve allowance program. Under this program, importers of certain goods would be required to buy emissions permits if they do not meet certain conditions listed in the bill. In addition to the border mechanism, the Waxman-Markey bill contains a provision to alleviate the transition burden by allocating for free about 70 to 80 percent of allowances created by the bill for a period of years and, as part of this program, energy-intensive and trade-vulnerable industries would be eligible for rebates based on a product-output basis to compensate both for direct and indirect costs imposed by the bill. Assume for the moment that border adjustments are allowable for carbon taxes or permits that are based on energy consumed or carbon emitted, either in making a product or its inputs and that the permit requirement on imports is considered an internal charge covered by GATT Article III rather than a charge or duty on importation covered by GATT Article II. If so, then the permit requirement would be reviewed under GATT Article III:2. Some studies argue that the permit allocation provisions for energy-intensive trade-vulnerable sectors in the Waxman-Markey are overly generous, raising the net - present value of anticipated profits over the period 2009 to 2030 (Fischer *et alia* 2010). If this argument is correct, and if the permit requirement on imports is applied without considering the domestic impact of free allowances, then the panel may find that the burden on imports exceeds the burden on domestic production

F. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs)

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) was meant to close gaps in the way intellectual property rights (IPRs) are protected around the world. In international climate negotiations, IPRs have become an important issue since they are closely related to technology transfer. Strong IPR protection has the potential to stimulate technology innovation but can also hinder technology transfer. Some developing countries have proposed compulsory licensing regimes as a way of improving access to green technology. One argument for compulsory licensing is that emission controls have external benefits that cannot be captured by adopting firms. Hence, in the absence of compulsory licensing at reasonable royalty rates, green equipment and process technology will be seriously underutilized. Needless to say, the United States and other advanced countries are vehemently opposed to compulsory licensing regimes, whatever the justification.

Cosbey (ed. 2008) has argued that the TRIPS agreement can foster technology transfer through so-called “TRIPS flexibilities” -- provisions that allow for certain limitations and exceptions to IPR protection. Many technology companies take exception to this interpretation. In the absence of prior agreement among WTO members, compulsory licensing might well spark a good deal of counterproductive friction. The subject is clearly grist for negotiation within the WTO framework.

G. Agreement on Trade-Related Investment Measures (TRIMs)

The Agreement on Trade-Related Investment Measures (TRIMs) applies only to measures that affect trade in goods. Recognizing that certain investment measures can restrict and distort trade, the TRIMs text states that no contracting party shall apply a measure inconsistent with GATT Articles III (national treatment) or XI (quantitative restrictions). The agreement lists TRIMs that would be inconsistent with these articles in its annex. The illustrative list includes measures which require purchase or use of local procurement by an enterprise (so-called “local content requirements”) or which restrict the volume or value of imports such an enterprise can purchase or use to an amount related to the level of products it exports (so-called “trade balancing requirements”).⁵⁴

Pursuant to Article 5.1 of the Agreement on TRIMs, members were required to notify any trade-related investment measure (TRIM) that are not in conformity with the Agreement within 90 days after the entry into force of the WTO Agreement. And under Article 5.2 of the Agreement, members were supposed to eliminate such measures notified under Article 5.1 within two years for developed countries, within five years for developing countries and within seven years for least-developed countries (after the date of the entry into force of the WTO). These transition time periods have now expired. Under this agreement, about two dozen member countries have notified their TRIMs to the WTO. Exceptions under the GATT also apply to the Agreement on TRIMs – and in the case of TRIMs introduced as climate measures, this escape valve could be particularly important for General Exceptions pursuant to Article XX.

There have been several disputes over the WTO consistency of TRIMs. For example, the United States and other member countries have raised concerns over some laws and regulations that “encourage” exportation or the use of local content in China. In its 2009 report to Congress on China’s WTO compliance, the United States Trade Representative (USTR 2009) noted that, while China has revised many laws and regulations on foreign-invested enterprises to eliminate WTO-inconsistent TRIMs, some still continue to encourage WTO inconsistent measures. It is easy to imagine that some countries may be tempted to adopt TRIMs which are not in conformity with WTO rules to protect domestic industries in the name of controlling GHG emissions.

H. General Exceptions (Article XX)

A measure violating any provision of the GATT can be excused if it qualifies for an exception under Article XX. The Appellate Body has explained that the exceptions are “limited and conditional,” and that the analysis is two-tiered. When a measure is provisionally justified by one of the specific exceptions, the panel will then determine whether the measure meets the legal standard set forth in the chapeau of Article XX.⁵⁵

⁵⁴ The full text of the TRIM agreement is available at http://www.wto.org/english/docs_e/legal_e/18-trims.pdf

⁵⁵ The full text of the GATT Article XX is available at http://www.wto.org/english/docs_e/legal_e/gatt47_02_e.htm.

Relevant to climate change, the subsections of Article XX permit otherwise inconsistent trade measures if they are “necessary” to protect human, animal or plant life or health (Article XX (b)) or if they conserve exhaustible natural resources (Article XX (g)). Both subsections appear to cover measures designed to control GHG emissions. While the Appellate Body rulings in previous cases show considerable sympathy with environmental concerns, the decisions are made case-by-case; they depend on the particular facts and circumstances; and the rule of *stare decisis* does not strictly apply.

A measure that is provisionally justified by one of the GATT Article XX specific exceptions is then further evaluated to see whether it is consistent with the chapeau of Article XX, the most serious barrier to the invocation of Article XX. The chapeau states that recourse to a GATT exception for challenged measures is “[s]ubject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures....” The Appellate Body’s interpretation of the standards set forth in the chapeau may vary as between different subsection paragraphs in Article XX. However, whatever paragraph is invoked, the burden of proof is on the defendant government.

Challenged measures in previous cases – for example, *United States- Reformulated Gasoline* case (DS2) and *Brazil-Tyres* case (DS 332) –were found to fall within the scope of one of Article XX subsection exceptions but were not justified because they failed to meet the tests in the chapeau of Article XX.

References

- Charnovitz, Steve. 2003. Trade and Climate: Potential Conflicts and Synergies (working draft). Washington DC: Pew Center on Global Climate Change.
- Charnovitz, Steve. 2002. A World Environment Organization (available at <http://www.wilmerhale.com/files/Publication/6ad8618d-6535-4a81-8046-cd084016b0f2/Presentation/PublicationAttachment/d61941b0-fa16-4ad1-9e19-254449cf83be/Charnovitz1.pdf>)
- Coady, David, Robert Gillingham, Rolando Ossowski, John Piotrowski, Shamsuddin Tareq and Justin Tyson. 2010. Petroleum Product Subsidies: Costly, Inequitable, and Rising, IMF Staff Position Note (SPN/10/05), Washington DC: International Monetary Fund
- Cosbey, Aaron (ed.). 2008. Trade and Climate Change: Issues in Perspective. Winnipeg: International Institute for Sustainable Development.
- Economist Intelligence Unit. 2010. After Copenhagen: Business and climate change
- Environmental Law Institute. 2009. Estimating U.S. Government Subsidies to Energy Sources: 2002-2008. Washington DC: Environmental Law Institute.
- Esty, Daniel C. 1996 Greening World Trade, in the World Trading System: Challenges ahead (ed. Jeffrey Schott), Washington: Institute for International Economics
- Esty, Daniel C. 1994. Greening the GATT: Trade, Environment and the Future. Washington: Institute for International Economics.
- Fischer, Carolyn, Eric Moore, Richard Morgenstern, and Toshi Arimura. 2010. Carbon Policies, Competitiveness, and Emissions Leakage. Conference Summary. Washington DC: Resources for the Future.
- Global Subsidies Initiative. 2009a. Achieving the G-20 Call to Phase Out Subsidies to Fossil Fuels. Policy Brief October 2009. (available at http://www.globalsubsidies.org/files/assets/I_policy_brief_on_G-20_Announcement_Oct_09-1.pdf).
- Global Subsidies Initiative. 2009b. Building Fossil Fuel Subsidy Reform: Have we got all the blocks?, Policy Brief December 2009 (available at http://www.globalsubsidies.org/files/assets/pb3_buildblocks.pdf).
- Government Accountability Office (GAO). 2009. *Biofuels: potential Effects and Challenges of Required Increases in Production and Use*. Washington DC: Government Accountability Office

Hufbauer, Gary Clyde, and Jisun Kim. forthcoming. Reaching a Global Agreement on Climate Change: What are the Obstacles? *Asian Economic Policy Review* 5, no.1 (paper also presented at the AEPR conference held in Tokyo, Japan, on October 3, 2009).

Hufbauer, Gary Clyde, Jeffrey J. Schott, and Woan Foong Wong. 2010. Figuring out the Doha Round. VoxEu (available at <http://www.voxeu.org/index.php?q=node/4657>)

Hufbauer, Gary Clyde, Steve Charnovitz, and Jisun Kim. 2009. *Global Warming and the World Trading System*, DC: Peterson Institute for International Economics.

International Energy Agency (IEA). 2008. *World Energy Outlook 2008*. Paris: OECD/International Energy Agency

Intergovernmental Panel on Climate Change (IPCC). 2007. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, eds. R. K. Pachauri and A. Reisinger. Geneva: IPCC.

Lodefalk, Magnus, and Mark Storey. 2005. Climate Measures and WTO Rules on Subsidies, *Journal of World Trade* 39, no. 1: 23–44.

National Board of Trade of the Government of Sweden. 2004. *Climate and Trade Rules – Harmony or Conflict?*. Available at http://www.kommers.se/upload/Analysarkiv/Publikationer/Climate_and_Trade_Rules.pdf.

National Foreign Trade Council (NFTC). 2010. *China's Promotion of the Renewable Electric Power Equipment Industry: Hydro, Wind, Solar and Biomass*. Washington DC: National Foreign Trade Council.

Organization for Economic Cooperation and Development (OECD). 2008. *Biofuel Support Policies: An Economic Assessment*. Paris: OECD

Pauwelyn, Joost. 2007. *US Federal Climate Policy and Competitiveness Concern: The Limits and Options of International Trade Law*. Nicholas Institute Working Paper 07-02. Nicholas Institute for Environmental Policy Solutions, Duke University

Pew Charitable Trusts. 2010. *Who is winning the clean energy race? : Growth, Competition and Opportunity in the World's Largest Economies*.

Purvis, Nigel and Andrew Stevenson. 2010. *Rethinking Climate Diplomacy: New Ideas for Transatlantic Cooperation Post- Copenhagen*. Brussels Forum Paper Series. German Marshall Fund.

Renewable Energy Policy Network for 21st Century. 2009. *Renewables Global Status Report 2009 Update* (available at http://www.ren21.net/pdf/RE_GSR_2009_update.pdf).

Robins, Nick, Robert Clover, and Charanjit Singh. 2009. "A Climate for Recovery: the

Colour of the Stimulus Goes Green,” London: HSBC.

Subramanian, Arvind and Aaditya Mattoo. 2009. From Doha to the Next Bretton Woods: A New Multilateral Trade Agenda," *Foreign Affairs*, January /February 2009

United States Trade Representative. 2009. 2009 report to Congress on China’s WTO Compliance.

Vranes, Erich, forthcoming. Climate Labelling and the WTO: the 2010 EU Ecolabelling Programme as a Test Case under WTO Law. in Herrman and Terhechte eds. *European Yearbook of International Law*.

World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington DC: World Bank

World Bank. 2010. *World Development Report 2010: Development and Climate Change*. Washington DC: World Bank

World Economic Forum. 2010. *Global Agenda Council Reports 2010: Summaries of Global Agenda Council Discussions from the Summit on the Global Agenda 2009*.

World Trade Organization (WTO) and United Nations Environmental Programme (UNEP). 2009. *Trade and Climate Change*. Geneva: WTO/UNEP