
Climate Finance

Regulatory and Funding Strategies for Climate Change and Global Development

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Climate Finance and
World Trade Organization (WTO)
Law and Policy



The WTO and Climate Finance

Overview of the Key Issues

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Key Points

- While the primary goal of the WTO is to prevent unjustified restrictions on trade, the WTO has shown sufficient institutional and normative flexibility to allow member states to address environmental concerns effectively; this should remain true with actions relating to climate change mitigation and adaptation.
- The WTO will play a central role in resolving tensions between WTO Members' domestic policies to limit emissions and their obligations under WTO rules.
- As the mechanisms currently open to the WTO to confront climate change are limited, the primary effort to mobilize mitigation must come from international agreements.

Climate change, being such a broad issue, intersects with a number of areas of World Trade Organization (WTO) work, although the WTO's primary focus is to fight distorting trade restrictions. It is often suggested that WTO rules will be in conflict with domestic actions taken under the United Nations Framework Convention on Climate Change (UNFCCC) or other similar multilateral environmental agreements (MEAs), but this need not be the case. The WTO, like the UNFCCC, strives to ensure sustainable development. This brief essay first outlines climate change issues within WTO law, including the Doha Development Agenda (DDA), and

then addresses some of the areas of potential tension between specific climate mitigation actions and obligations under the WTO.

The WTO's core activities are to negotiate reductions of tariffs and subsidies; to prevent domestic regulatory and other measures that unjustifiably restrict trade; to monitor domestic actions that may affect trade; and to settle disputes among its members. Basic rules include, among others, (1) the prohibition of unjustifiable discrimination between imported and domestic like products and (2) the prohibition of unjustifiable border import and export quotas.

Though created following World War II to stimulate the global economy, the WTO has demonstrated an institutional and normative capacity to adapt to the changing needs of its members. Although WTO has not yet discussed or acted on climate change per se, it is inevitable that it will do so in the future. And while WTO jurisprudence has not yet responded to the needs of climate change, it has been responsive to other new environmental needs of members. Therefore, when the WTO deals with climate change, it will benefit from the clarifications of WTO law on the scope of the environmental exceptions in General Agreement on Tariffs and Trade (GATT) Article XX; WTO Appellate Body (AB) decisions have been used to clarify relevant terms, conditions, and issues; and Members, responding to societal changes, have adopted waivers and even amendments to basic WTO provisions. Finally, some Members are talking about a temporary dispute peace-clause for climate-related issues. This could allow Members to rapidly adapt their domestic regulatory systems in a WTO-consistent manner to the needs of climate change mitigation.

In this paper, the issue of climate change is addressed from the perspective of the existing provisions of the GATT and the environmental exception in GATT Article XX in particular, as well as how trade negotiation can also facilitate climate change mitigation and adaptation measures.

GATT Article XX

Article XX enumerates a list of general exceptions that allow Members to give priority to policies other than trade, such as the protection of the environment. Generally, in WTO law a government is entitled to set the level of environmental protection it considers appropriate. Article XX authorizes such environmental measures that may incidentally violate other WTO obligations if they are "apt to contribute materially to the policy

goal at issue.” Importantly, the contribution of the environmental measure to the policy goal does not need to be immediately observable. As the AB noted, “it may prove difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive programme.” This is very relevant as climate change is a global phenomenon, and the contribution of any single domestic climate change mitigation measure to global mitigation will be very difficult to establish.

An important unresolved issue is the extent to which the environment exception of Article XX can be invoked against violations of WTO provisions other than those of the GATT (for instance, to the provisions of the Subsidies and Countervailing Measures Agreement that can become relevant if governments issue free emissions allowance as part of a cap-and-trade regulatory program) and with what effects.

Doha Development Agenda (DDA)

In the ongoing DDA, Members are negotiating enhanced tariff reductions on “environmental goods and services” that should favor the trade of the most needed clean technologies. Currently, the US imposes tariffs (topping out at 5.2%) on 32 of the 43 climate-friendly technologies identified by the World Bank. China imposes duties on all but two of the product categories, with a maximum rate of 35%. These tariffs are an impediment to trade and hinder the spread and development of clean technologies.

In the DDA, Members are also negotiating how to operate the relationship between the WTO rules and the commercial obligations in MEAs, which could become relevant if a treaty related to climate change (CC) is adopted.

Further, concluding the DDA would further open markets in favor of developing countries’ exports and reduce trade-distorting agriculture protections, thus enhancing the economic power of developing countries and providing them with more means to take CC-related actions of all kinds.

However, it is worth remembering that both the DDA and GATT Article XX were not designed to deal with climate change issues. Recognizing this, WTO Director-General Lamy insists that once a new multilateral agreement on climate change is adopted, the WTO will be able to act effectively to allow members to implement their CC commitments harmoniously with their trade obligations.

*Potential Tensions between Climate Policy and
International Trade Law*

With the increase in domestic climate change regulation, the potential for tension between it and Members' WTO obligation increases. This section lists some of these potential areas of tension.

National Treatment and Most-Favored-Nations Obligations

All domestic regulations and taxation systems that potentially affect trade are subject to the national treatment and most-favored-nation obligations of the WTO—a very broad and powerful set of obligations. This means that imported and domestic “like” products—defined as products that compete with each other—must be treated similarly. Thus, a product coming from a country where there is a climate change program and another product from a country where there is no such program are “like” to the extent that they compete with each other and therefore must be treated the same way, unless the Article XX exception is invoked to justify such violation.

But if the environment exception is invoked, the importing country's environmental measures must be “apt to contributing materially” to the policy goal invoked—that is alleviating climate change—and such measures must be implemented in good faith. This means that countries in the same conditions must be treated similarly, and the level of development of the exporting countries must be taken into account; in addition, according to WTO case law, specific climate change actions undertaken by specific exporters (distinct from their government actions) would also have to be taken into account. For example, following the Shrimp-Turtle AB decision, even though domestic regulation may allow imports only from a country that has a climate change mitigation program, it could be argued that it must allow imports from a non-complying country if specific exporters within that country take comparable climate change mitigation actions.

So-called border tax adjustments raise significant issues under the national treatment obligations; when can a WTO member impose at the border a tax or a tariff against goods coming from a country that may not have a climate change program? When can a member offer its producers a tax rebate on their exports? What is the use of Article XX when environmental leakage is invoked to justify a violation of WTO rules?

Agreement on Technical Barriers to Trade (TBT)

As a result of the TBT, the WTO has rules applicable to domestic standards regulating products, the preparation and application of those standards, and their mutual recognition. For instance, government standards on logging certification and other forest product regulations adopted by Members as part of their responses to climate change must respect the prescriptions of the WTO TBT Agreement. The same is true for all energy efficiency standards, electricity standards, eco labels, certification schemes, etc.

Another important rule of the WTO (mentioned in the TBT and Sanitary and Phytosanitary (SPS) Agreements) is that if a domestic regulation complies with an existing international standard, such domestic regulation is presumed to be WTO consistent even if it restricts trade. At the moment, no such international standards relating to climate regulation exists. However, if specific climate regulatory standards were negotiated internationally, it could be argued that a domestic regulation implementing such standards could benefit from the WTO presumption of compatibility.

Also relevant is how to deal with private standards, such as those established by industry groups, NGOs, or the International Standards Organization. Such standards are generally not subject to WTO disciplines, but may become so if they are sponsored or promoted by Members. WTO law is not clear on this question.

Free Emissions Allowances

The WTO has rules concerning the level of specific production subsidies that will be allowed; such subsidies are restricted when they cause adverse effects on trade and international competition. Additionally, there are prohibitions on export subsidies. These provisions are relevant to domestic GHG emissions trading schemes that issue free allowances to local producers. As well, the WTO Subsidy Agreement and the national treatment allow for some forms of export tax-product rebates, subject to certain conditions. However, an economy- or sector-wide tax (as would be likely under a climate change program) is not product-specific, and so unable to be rebated upon export. Finally, the border administration of licenses will also be subject to the requirement of the Import Licensing Agreement, with regard to notification, transparency, and other administrative issues.

Agriculture

WTO rules to reduce distorting subsidies in agriculture can also become relevant for the protection of the environment. Reducing distorting subsidies will tend to favor the more naturally efficient agriculture producers and thus reduce the overuse and environmental abuse of agricultural land, which can result in high GHG emissions. On the other hand, the Agreement on Agriculture provides for unlimited “green subsidies,” the full potential of which needs to be explored for climate change programs. Agriculture, which is one of the sectors most vulnerable to climate change, is also a key sector for international trade through subsidies to bad fertilizers, bad feedstock for animals, subsidies to dedicated energy crops to replace fossil fuel use, improved energy efficiency, etc.

Regional Trade Agreements (RTAs)

As it is not clear when international agreement might be reached, it is quite possible that members of regional trade agreements will negotiate CO₂ standards, or even climate change conditioned rules of origin. As the WTO has rules on RTAs, the question arises as to how it should reconcile climate change actions taken by Members on the national, regional, and multilateral levels.

General Agreement on Trade in Services (GATS)

The rules on trade in services could also become relevant as they prohibit discrimination between foreign and domestic service providers. Trade of emissions allowances and other climate assets might be covered under GATS, and considered as of the same nature as “financial services.” The GATS rules on investment (mode 3) may also become relevant as investment and competition-related actions will be crucial to stimulate climate change mitigation programs.

Technology Transfer and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

Finally, TRIPS rules are also very relevant. Mitigating climate change will be a major technological challenge. Of crucial importance will be technology transfer between countries; commercialization of low-cost

technologies (many of which exist, but will need to be scaled up); and relations between innovation, patents, and compulsory licenses.

Conclusion

There is a significant overlap between climate issues and areas of WTO competence. As such, WTO rules should be kept in mind when constructing a post-2012 regime for climate change mitigation. Any new agreement need not be in conflict with the WTO.

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Chapter 29



Carbon Trading and the CDM in WTO Law

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Key Points

- WTO rules are likely to play a central role in the regulation of carbon trading and other forms of carbon finance, both in the interim as climate finance regulatory bodies begin to address domestic measures affecting trading and in the long term as the carbon market becomes truly global.
- This paper examines some key issues in the evolving legal framework for international carbon trading and associated services, including the likely treatment under existing WTO agreements of the three Kyoto flexibility mechanisms and other trading systems for carbon assets.
- Although no policy exhortations are made here, it is clear that decisions about which legal provisions will regulate carbon finance will involve many complexities and have significant consequences, and therefore must be thought through carefully.

Capped Emissions Trading

The Kyoto Protocol authorizes three flexibility mechanisms to reduce the cost of compliance with its emissions targets. The first to be considered

of these is a system of emissions trading among Annex I nations provided under Article 17, where countries with caps (calculated in assigned amount units, or AAUs) can reallocate the burden of abatement between them. Although the Protocol contains some general language regarding this system, including a requirement that Annex I Parties “strive to implement policies and measures . . . in such a way as to minimize adverse effects . . . on international trade . . . [and] on other Parties, especially developing country Parties,” it provides very little specific guidance on the details of regulating international emissions trading, nor has significant progress been made in clarifying these arrangements. Given this absence, World Trade Organization (WTO) rules are likely to form a significant part of the relevant multilateral legal regulation.

One point to make clear is that trading of AAUs between states is governed by the Convention and Kyoto, whereas transnational transfers of permits recognized under domestic law as valid within domestic emissions trading schemes (such as the European Union Emissions Trading Scheme (EU ETS)) are not addressed by any international agreement. As yet, the WTO has not made a determination of whether and how any type of carbon market and the assets being traded falls under its auspices. Assuming the WTO would have regulatory jurisdiction, would these items be treated as financial services under the General Agreement on Tariffs and Trade (GATS) or as falling under some other GATS sectoral classification (perhaps environmental or energy services)? Alternatively, could they be considered goods under GATT, considering the carbon market primarily in terms of how it affects the terms and conditions of production of the goods for which carbon-based energy is an input?

While Article 17 authorizes emissions trading of AAUs only among states, it envisages that correlative carbon permits issued by states can be bought and sold directly between private parties or indirectly through brokers and exchanges. In practice, carbon trading seems very much like a financial service: the exchange of funds for an intangible right (to pollute). Moreover, there is no physical object that ever changes hands. That said, in their treatment by market participants, carbon permits also appear to be very similar to other basic commodities such as oil or corn, and these commodities are unquestionably goods. The answer may not be of an either/or character: as the Appellate Body held in *EC-Bananas*, the same regulatory scheme may affect trade in both goods and services, and therefore both the disciplines of the covered agreements on trade in goods and those of GATS may be applicable. Moreover, it is highly likely

that regardless of the treatment of the underlying asset (i.e., allowances or credits) any financial products used within the context of carbon markets (e.g., derivatives such as swaps, futures, and options) will be treated as financial products and not goods.

If carbon trading is considered to be a financial service, then it would fall under the Annex on Financial Services to GATS. Finding carbon markets to be financial services under GATS would allow governments some latitude in taking prudential regulatory and other measures to protect their national markets and the international carbon market. Article 2 of the Financial Services Annex states that “a Member shall not be prevented from taking measures for prudential reasons, including for the protection of investors, depositors, policy holders or persons to whom a fiduciary duty is owed by a financial service supplier, or to ensure the integrity and stability of the financial system.” If the “integrity and stability” of the carbon market is challenged, as may happen if allowances from other countries with emissions in excess of their caps are traded, the broad language of the Financial Services Annex will enable governments to support the market by excluding such permits if they do not conform to acceptable criteria.

Carbon trading also implicates the Subsidies and Countervailing Measures (SCM) Agreement. The definition of subsidy contained in Article 1.1(a)(1)(ii) of the SCM Agreement includes financial contributions “where government revenue otherwise due is foregone or not collected (e.g., fiscal incentives such as tax credits).” Article 1.1(b) lays out the other criterion for a subsidy—that a benefit be conferred by the financial contribution in question. Thus, if under any carbon trading system governments provide free carbon allowances that are then resold on the carbon market for a windfall profit, this may be viewed as a subsidy.

CDM and JI

The Clean Development Mechanism (CDM) and Joint Implementation (JI) are the other two Kyoto flexibility mechanisms, provided in Articles 12 and 6 of the Protocol, respectively. They achieve cost reductions by allowing developed countries to fund, directly or indirectly, emission reduction projects in developing countries (for CDM) or Annex I developed countries (for JI) and use the resulting certified emission reductions (CERs from CDM projects and ERUs from JI) towards meeting their own

targets. Since these projects involve financing transfers to other countries as well as the possibility of technology transfer, a variety of WTO provisions are implicated. All of the relevant foregoing analysis from emissions trading could theoretically be applied to these mechanisms.

One way to consider these arrangements is as a transfer of emissions reductions between countries. Conceptualized this way, these projects could be seen as falling under GATS, as the trade in emissions reductions could be seen as trade in services: for instance, if a steel mill in Germany buys CERs from a wind farm in Morocco, this could be seen as the steel mill paying the wind farm to reduce the total GHG emissions of the two countries by a certain amount, with the CER as a mere certification of this service. This implicates most-favored-nation (MFN) provisions as well as National Treatment and Market Access provisions where a Member has bound the relevant sector(s) in its schedule.

Additionally, the WTO Agreements pertaining to trade in goods may apply (as suggested for international AAU/permit trading above) where the scenario above is rephrased in terms of the CERs being goods produced in Morocco and sold to a buyer in Germany or where inputs in energy production are concerned, for instance. The investment-oriented nature of these projects may also implicate the Agreement on Trade-Related Investment Measures (TRIMS). In the event that a project is inconsistent with either national treatment (GATT Article III) or quantitative restrictions (GATT Article XI), it would be in violation of TRIMS Article 2.1.

Two other potentially relevant WTO agreements are the Agreement on Government Procurement, since these projects involve cross-border investments under the supervision of governmental authorities, and the Technical Barriers to Trade (TBT) Agreement, which may apply where an Annex B country investing in a CDM project faces local technical regulations or conformity assessment procedures relating to products originating in the Annex B country.

It is quite likely that additional emissions credit offset trading systems between developed and developing countries will be established in connection with domestic ETS, such as the EU ETS and the US ETS provided by the Waxman-Markey legislation. In addition, arrangements to link domestic cap-and-trade systems will generate international emissions trading in allowances. These systems, arising initially under domestic law and agreements among specific states, will generate similar regulatory issues under international trade law.

RECs

Carbon trading is not the only form of instrument addressing greenhouse gas emissions. Whereas emission trading schemes involve the sale and purchase of entitlements to produce greenhouse gases, renewable energy certificates (RECs) serve to meet the requirement that a minimum share of electricity generated must come from renewable energy sources. Transactions in RECs are akin to emission trading schemes, but trade in RECs falls even more squarely into the realm of financial services, with the certificates usually being decoupled from the underlying energy being generated.

The analysis applicable to emissions trading above would also apply to trading of RECs, but due to RECs being decoupled from the actual energy being produced, provisions of GATS relating to transparency and disclosure, such as Article VI if licensing is required or paragraph 2(a) of the Financial Services Annex, will be particularly relevant to trade in RECs in order to avoid problems of accountability.

Conclusion

Because the United Nations Framework Convention on Climate Change/Kyoto regime has not resolved the regulatory uncertainties surrounding trading of AAUs/permits and project-based credit offsets, there is room for the WTO to play a role in providing additional regulatory support. WTO rules will also be highly relevant for new international offset credit and permit trading systems established pursuant to domestic law and agreements between individual states, and to international trading of RECs. The basis of WTO regulation could be found in existing, yet rarely used, agreements such as TRIMS and the Annex on Financial Services, as well as more frequently applied agreements such as GATS and the SCM Agreement. That said, the regulatory void surrounding international carbon trading highlights the need for an immediate solution with enforcement or adjudicatory capabilities, particularly in the current financial climate. The WTO can certainly help to fill the gap, but international climate regulatory laws and authorities must also address the issues. This is a priority for Copenhagen and beyond.

Chapter 30



Countervailing Duties and Subsidies for
Climate Mitigation

What Is, and What Is Not, WTO-Compatible?

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Key Points

- Subsidies are regulated by the WTO through the Subsidies and Countervailing Measures Agreement, which lays down rules for which subsidies are not permitted and recourse if they are used.
- One possible argument is that a state's omission to internalize the negative externality of climate change through domestic regulation can count as a subsidy, although the viability of this line of reasoning has been called into question.
- The allocation of free allowances to protect domestic industry from the competitiveness concerns of leakage raises subsidy issues, possibly even contravening WTO rules, and the same applies to certain efforts to promote renewable energy use.

Background on Subsidies in the Climate Change Field

The United Nations Framework Convention and Climate Change (UNFCCC) and the Kyoto Protocol adopt an approach to mitigation of

climate change based on states binding themselves to reduce greenhouse gas (GHG) emissions to agreed levels, based on the notion of “common but differentiated responsibilities” for developed and developing countries. The Kyoto Protocol, however, does not specify the policies that states must use to achieve the bound emissions reductions, or the relevant desirability of different policy instruments. The Protocol merely provides a list of policies that states may use to achieve emissions reductions.

Many of these policies can be pursued either by regulatory measures—emissions caps, renewable energy mandates, etc.—and/or through subsidies that provide incentives to market actors to engage in behavior that leads, either in the short term or long term, to lower emissions. The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report, notes, “direct and indirect subsidies can be important policy instruments, but they have strong market implications and may increase or decrease emissions, depending on their nature. Subsidies aimed at reducing emissions can take on different forms, ranging from support for research and development (R&D), investment tax credit, and price supports (such as feed-in tariffs for renewable electricity).”¹ The International Energy Agency (IEA) in its database “Addressing Climate Change: Policies and Measures” distinguishes a range of policies that would be considered to have subsidy elements, at least from the perspective of international trade rules, including incentives/subsidies (direct payments to market actors); public investment; and research and development. The IEA database divides Climate Change Policies and Measures into those that support renewable energy and those that support energy efficiency. As is evident from an examination of the measures inventoried in the database, a wide range of IEA members and other states have implemented a variety of policies with elements of subsidies. The pervasiveness and diversity of such policies as means of implementing Kyoto obligations lead to important consequences both for global governance of climate change *and* for the international trading system, especially the World Trade Organization (WTO).

Subsidy Regulation under the WTO

The Uruguay Round Subsidies and Countervailing Measures Agreement (SCM) placed in the category of “prohibited” in the SCM Agreement

export subsidies (subsidies given only for products that are exported) and domestic content requirements (requirements that goods sold in a country contain a certain minimum of domestic value added). The Agreement introduced a category of domestic subsidies called “actionable,” which can be challenged in WTO dispute settlement proceedings, thus providing a multilateral legal remedy against subsidization. In order for a subsidy to be challenged in WTO dispute settlement as “prohibited” or “actionable,” it has to fall within the definition of subsidy in Article 1 of the SCM Agreement, which means it must entail a “financial contribution” of governmental financial assistance to firms (from cash payments to equity infusions to provision of goods and services below market prices), and also confer a “benefit” on an enterprise; the subsidy must also be “specific,” either *de jure* (legally targeted at a particular industry or enterprise or group of industries or enterprises) or *de facto* (in fact used only or disproportionately by a particular industry or enterprise or group of industries or enterprises). 2.1(b) of the SCM Agreement refines the concept of specificity:

Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification.

In the case of prohibited subsidies (i.e., export subsidies), specificity is presumed and does not have to be proven by the claimant.

If a subsidy meets the above criteria for actionability, a WTO Member may either challenge the subsidy in WTO dispute settlement, seeking the remedy of removal of the offending measure, or it may countervail the subsidy. If a Member pursues the first option, it must show the existence of certain “adverse effects” on WTO Members other than the subsidizing Member, including itself. These adverse effects are listed in Article 5 of the SCM Agreement, and include injury to domestic producers of a like product in competition with the imported subsidized product (injury in this sense must exist if countervailing duties are to be imposed); nullification or impairment of benefits accruing “directly or indirectly” under the

GATT, in particular tariff concessions; or serious prejudice to the interests of another Member. “Serious prejudice” is further defined in Article 6.3. To show “serious prejudice” the complaining WTO Member must show that the effect of the subsidy is to displace imports of a “like” product into the market of the subsidizing Member; or to displace exports of the complaining Member to a third country market; or significant price suppression or price undercutting in the same market with respect to like products; or finally “the effect of the subsidy is an increase in the world market share of the subsidizing Member in a particular subsidized primary product or commodity as compared to the average share it had during the previous period of three years and this increase follows as a consistent trend over a period when subsidies have been granted.”

Where the Member chooses the option of imposing a countervailing duty (CVD), it must comply with the various procedural and substantive criteria in the SCM Agreement that apply in the case of CVD actions, including the requirement of showing “material injury.” These criteria apply also where a Member is countervailing a “prohibited” subsidy. The SCM Agreement (Article 8) originally entailed a defined list of subsidies to be *deemed* “non-actionable,” i.e., subsidies immunized from challenge in WTO dispute settlement as well as countervailing duty action, even if they were to be found to meet the criteria discussed above. This list included certain subsidies for research and development, environmental protection, and to disadvantaged regions. However, this provision for deemed non-actionability applied provisionally, for only the first five years that the SCM Agreement was in force. Since its effective expiration, WTO Members have been unable to agree to either continue with the list as it now stands or to create a different list. Therefore, today there are no subsidy programs that are explicitly protected as non-actionable.

Omission to Regulate—a Subsidy?

Joseph Stiglitz has suggested that the failure especially of the WTO Members not participating in the Kyoto Protocol to internalize the climate change costs caused by carbon emissions from the production of products is a “subsidy” to the producers of such products, resulting in a distortion of international markets in the trade in goods. Most WTO legal experts who have commented on Stiglitz’s proposal have dismissed it as clearly

not justified under the WTO rules in the SCM Agreement, since one or another of these criteria is obviously not met. According to Bhagwati and Mavroidis, “a subsidy exists only if a government has made a financial contribution or has incurred a cost. . . . The argument that the United States policy [of not participating in Kyoto] is a ‘hidden subsidy’ is irrelevant and cannot justify an EU action under the SCM Agreement.”²

Nevertheless, among the meanings of “financial contribution” in the SCM Agreement is the government provision of goods or services other than general infrastructure. There are no pre-assigned property rights to the atmosphere; instead, states are generally thought to have prescriptive jurisdiction over this commons, subject to international obligations by treaty (e.g., the Kyoto Protocol) or custom. Thus, where a firm is allowed to emit carbon into the atmosphere up to a certain ceiling, this is not a consequence of some preexisting property right in the atmosphere that is being exercised by the firm, but rather, of the assignment of such a right or entitlement by the state to the firm in question. Such a right or entitlement is a valuable asset, indeed an asset that can be bought and sold in the marketplace. The question arises as to whether the failure to charge a market price for the asset in question constitutes the provision of goods or services, and therefore a financial contribution within the meaning of Article 1 of the SCM Agreement.

Leakage

Various policy measures have been proposed to address the problem of “carbon leakage”—the notion that where a jurisdiction imposes emissions caps on its industries, these industries may become uncompetitive relative to those operating in jurisdictions where no such caps exist, or lesser burdens to limit or reduce emissions. Both an increase in emissions caps and the provision of free allowances to selected industries would raise issues under the SCM disciplines. Since rights to pollute constitute provision of a valuable good by the government (access to an exhaustible natural resource), and thus a “financial contribution,” whether these are provided in the form of basic entitlements up to a certain level, or as free allowances, they may well be actionable subsidies where they are specific (i.e., targeted at particular industries facing competitiveness pressures) or de facto (i.e., disproportionately or predominantly used by certain sectors).

Promoting Low-Carbon Investment

A wide range of subsidy programs purports to address climate change through reducing the cost of producing and/or consuming energy from non-carbon-emitting sources, relative to conventional, carbon-emitting energy sources. According to the IPCC in its Fourth Assessment Report, “One of the most effective incentives for fostering GHG reductions are the price supports associated with the production of renewable energy, which tend to be set at attractive levels. These price supports have resulted in the significant expansion of the renewable energy sector in OECD countries due to the requirement that electric power producers purchase such electricity at favorable prices.”

In the *PreussenElektra* case, the European Court held that minimum-price purchase requirements under German law could not be considered “state aid” in European law because of the absence of any direct or indirect transfer of state resources.³ In the WTO SCM Agreement, by contrast, a “financial contribution” includes a situation where “a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in [SCM Agreement Article 1.1(a)(1)] (i) to (iii) . . . which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by government.” Since SCM Agreement Article 1.1(a)(1)(iii) includes “purchasing goods,” the argument is that a situation where the government directs a private actor to purchase goods at a higher than market price is included within the meaning of “financial contribution” even if the government does not incur any cost *itself*. In the *Canada-Aircraft* case (Paragraph 160), the Appellate Body observed that “financial contribution” could include those situations where a private body has been directed by the government to engage in one of the actions defined in the SCM Agreement Article 1.1(a)(1)(i)–(iii), even if the government does not bear the cost of such delegated action.

However, the German minimum-price purchase requirements do not necessarily constitute a “financial contribution” within the meaning of the SCM Agreement, because where the government entrusts or directs a private body, the SCM Agreement *also* requires that the function entrusted or delegated to the private body be one that is *normally* performed by the government.

In order to violate WTO rules, a subsidy has to have conferred a “benefit” on the recipient, i.e., a competitive advantage over and above gen-

eral “market” conditions. Some programs for renewable energy may not confer a “benefit” in this sense. Measures that merely defray the cost of businesses acquiring renewable energy systems or which compensate enterprises for providing renewable energy in remote locations do not necessarily, for instance, confer a “benefit” on the recipient enterprise. They simply reimburse or compensate the enterprise for taking some action that it would otherwise not take, and the enterprise has not acquired any competitive advantage over other enterprises, which neither take the subsidy nor have to perform these actions.

With respect to the requirement of *specificity*, subsidies that are provided to *users* of renewable energy may well not be specific if they are available generally to enterprises in the economy.

FURTHER READING

International Energy Agency (IEA), *Addressing Climate Change: Policies and Measures Database*, available at <http://www.iea.org/textbase/pm/?mode=cc>.

NOTES

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Border Climate Adjustment as Climate Policy

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Key Points

- Border Climate Adjustments (BCAs) are national measures based on the principle that climate costs should be imposed on GHG-intensive production at the point of market entry rather than the point of production.
- These measures impose a non-discriminatory price on imported GHG-intensive goods as a condition for market entry, complementing the imposition of climate costs on like domestic products via national regulation.
- Comporting with the destination principle, BCA measures may also be used to remit the costs imposed by domestic GHG-intensive goods regulation for goods destined for consumption and driven by demand from other markets, encouraging destination governments to similarly employ the market-access-conditioning approach to regulating GHG-intensive consumption.
- BCA measures can improve the political viability and environmental effectiveness of national regulation, and if the two are structured correctly, they can be permissible under the international trade law regime.

Distributing the global greenhouse gas (GHG) abatement effort (and the costs of that effort) necessary in light of Intergovernmental Panel on Cli-

mate Change (IPCC) findings is a daunting problem. It appears essential to regulate GHG emissions by putting a price, through a carbon tax or a cap-and-trade scheme, on tons of GHG emitted. Doing this through national regulation has the potential to cause “carbon leakage,” shifting GHG-intensive production (such as iron, steel, aluminum, pulp and paper, and cement) towards jurisdictions with less stringent or no regulation. Globalized markets for these products make such shifts more possible, undercutting emissions control regimes.

Accordingly, measures to correct for the competitiveness-distorting/emissions-leakage effects of domestic GHG regulation may prove a necessary component of such national schemes, both as a matter of domestic political viability (to guard industry against unfair competition with foreign goods not subject to similarly stringent climate costs) and environmental effectiveness (to ensure that total GHG emissions are actually reduced). I will call such measures border climate adjustment (BCA) schemes, by which I will mean a general category of national regulations directed at certain categories of imported products, which seek to impose a total price on the production of these goods approximating the total price imposed on the production of like domestic goods.

The ultimate purpose of a BCA scheme is to substantially preempt emissions leakage. A BCA scheme (used in conjunction with a similar cost internalization scheme imposed on domestic producers supplying the national market) ensures that the domestic emissions reductions are not offset by the presence of non-regulated products in the marketplace. If GHGs emitted in the course of industrial production are regulated by a national cap-and-trade scheme coupled with a BCA for imports—that is, if the point of climate cost payment occurs at point of market entry in the destination market—the problem of emissions leakage does not arise to the same extent. Because foreign production costs are equalized with those of domestic production through BCA schemes, producers face the same costs of selling goods in the destination market irrespective of the level of GHG regulation in the country of origin.

The use of a BCA-enabled market-access-conditioning approach may facilitate the gradual build-up of an eventually comprehensive global GHG management regime by leaving it up to each state to effectively regulate its own contribution to ongoing GHG emissions from industrial production worldwide. To prevent against emissions leakage—that is, to effectively regulate some discrete portion of continued global GHG emissions which may be directly traced back to consumption demands within

a given national market—State A regulates GHGs emitted in the course of producing only and all those units of (covered) production that enter its market, whether home-made or foreign. As products from State B incur costs when exported to State A (and so producers based in State B complain to their government), State B will seek in return to generate revenue from imposing its own climate costs upon goods imported from State A. Because World Trade Organization (WTO) Members are only permitted to impose costs upon imports from other Members evenhandedly with like costs imposed on like domestic products, the political feasibility of instituting domestic regulation in State B is thus increased.

Anticipating the likelihood that countries of origin significantly affected by BCA costs may seek to subject State A's exports to BCA as a condition for market entry, State A withdraws products destined for consumption in other markets from its regulatory scope, possibly through remitting allowances back to exporting producers. As States B, C, D, etc., begin to similarly regulate GHGs emitted because of consumption demands for certain GHG-intensive industrial production—that is, as other States begin to similarly condition access to their market (for both domestic and foreign covered goods) on the payment of a price for (approximately) each ton of GHG emitted per unit of production seeking market entry—an increasing quantity of GHG emissions attributable to global production effort will be placed within the scope of an effective (because not subject to emissions leakage) climate cost-internalization regime.

Because the regulatory purpose of a well-designed BCA, coupled with a national cap-and-trade scheme which initially allocates GHG permits by government auction, is essentially the same as that behind a direct tax levied at point of market entry for GHGs emitted in the course of certain products' production, such BCA may, in principle, be structurally conceived in the WTO as a legitimate border tax adjustment (BTA) scheme.

A Working Party established by the precursor to the WTO to analyze and clarify international trade law on BTAs adopted the following definition of taxes: "compulsory, unrequited payments to general government. They are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments."²¹ The forced internalization of climate costs into costs of production through mandatory requirements to purchase and retire a number of GHG emission allowances or credits equal to the tons of GHG emitted in the course of a given compliance period easily fits within this broad definition. Leaving aside the special problems of allowances distributed to domestic industry

at no cost by the government, the market price of GHG allowances paid to the government at auction, in addition to any penalties paid for every ton of GHG emitted in excess of surrendered allowances or credits, are payments to the government.

One could argue that a governmental program imposing a price on every ton of GHG emitted does not require unrequited payment because in return for payment, the regulated entity receives the right to pollute a quantity of GHG tons precisely in proportion to that paid for. Nevertheless, as a matter of public policy, GHG emission allowances should not be conceived as benefits in proportion to the payments made to the government in terms of their market price, as it would be inconsistent with the general spirit of national GHG-capping legislation to construe such an Act as creating beneficial rights to pollute when its long-term goals are in fact to drastically reduce or eliminate GHG emissions. Moreover, as prices increase over time (due to lower caps, higher taxes, or more stringent standards) the relationship between tax surrendered and “benefit” granted breaks down even further.

Importantly, the Agreement on Subsidies and Countervailing Measures (SCM) explicitly allows the remission of prior-stage cumulative indirect taxes on “energy, fuels, and oil used in the production process.”² A WTO Member’s domestic GHG management regime which mandates the payment of some price for every ton of GHG emitted in the course of GHG-intensive regulated entities’ production effort over a given timeframe is essentially a scheme which imposes a tax upon GHG-intensive energy used in the course of certain industrial production: the majority of GHG tons emitted in the course of GHG-intensive production is due to the energy consumed in producing, rather than some other aspect of the production process. Accordingly, were a WTO Member to choose to regulate such GHG emissions on the destination principle—that is, to impose a price upon only those GHG tons attributable to products consumed on the home market—then, under the SCM Agreement, that Member could lawfully remit payment for such quantity of GHG that is proportionate to the portion of total regulated production effort that is exported to be consumed (and presumably regulated) in other markets.

The same legal principles that govern the adjustability of consumption taxes with respect to products destined for export also govern the adjustability for those same payments with respect to foreign products entering the home market for consumption. Because, as reported by the BTA Working Party, “GATT provisions on tax adjustment appl[y] the principle

of destination identically to imports and exports,”³ eligibility for adjustment with respect to the remission of taxes on exports destined for consumption in other markets ipso facto translates into eligibility for adjustment in the form of taxes levied on imports seeking access to the US market. Accordingly, prior-stage cumulative indirect taxes on GHG-intensive energy used in the course of production are equally adjustable with respect to imported products seeking access to a Member’s market as they are with respect to products destined for consumption elsewhere.

Given that all BCA systems face the tough challenge of calculating the level of GHG embodied in imported products, I argue for the use of a BCA scheme based on the destination principle rather than the kind of measures included in many existing BCA proposals, which commonly use a “comparability-in-effect” test to establish whether imports come from a country with sufficient levels of GHG regulation. Calculating the comparability of other regulatory systems is notoriously difficult: a price on carbon can be used as comparator if a carbon tax or cap-and-trade scheme is used, but (i) price volatility, (ii) different system characteristics (e.g., coverage, offset use, intertemporal flexibility), and (iii) other regulation (e.g., renewable energy standards) make this comparison far from easy. Moreover, once a significant number of nations regulate GHG in a meaningful way, the administrative challenges faced by an agency tasked with performing these calculations will multiply exponentially. Regulation using the destination principle entirely avoids these issues and is more likely to be WTO-compliant.

In sum, room can and should be found in the global climate regime for more stringent unilateral action involving the use of non-discriminatory BCAs, which does not preclude the use of other measures to correct for historical responsibility or developmental inequities, such as side payments or technology transfer agreements. BCA measures, in conjunction with national cap-and-trade schemes which allocate capped tradable allowances by government auction, may not only be justified as a matter of world trade law, but may also offer unique benefits for the development of economically efficient and environmentally effective global GHG management. Conditioning market access for certain domestic and imported GHG-intensive goods on the purchase of GHG allowances for every GHG-ton emitted in the course of production may thus provide an important climate policy mechanism, encouraging the gradual establishment of a transborder administrative regime for coordinating the appropriate

levels of cost distribution necessary to eventually steer the globe toward both a well-functioning climate and a well-functioning economy.

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Enforcing Climate Rules with Trade Measures

Five Recommendations for Trade Policy Monitoring

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Key Points

- Developing countries are rightly wary of pro-climate trade measures being used as protectionism by developed countries, and also about formulation of new trade rules and classifications for environmental services and embedded carbon in ways that favor developed country interests.
- Developing countries need to build greater capacity to monitor the trade policies of other countries, to detect in time and challenge disguised protectionism.
- The WTO Trade Policy Review Mechanism should be strengthened to combat environmental measures that might be protectionist.
- Developing countries need to increase their expertise and influence on climate-related services, standards, and labels, or the rules will become skewed against their interests.
- Emissions measurement and self-reporting capacity in developing countries must be greatly strengthened.

Laws being drafted or proposed in developed countries envisage the use of trade sanctions to induce participation by other countries in a global

climate regime, or to level the playing field for businesses and avoid relocation and carbon leakage, or to punish non-compliant countries. It is possible that an international climate agreement may eventually authorize certain trade sanctions, as was done in the Montreal Protocol on the stratospheric ozone layer and for other environmental aims. New rules and definitions are being developed on issues such as liberalization of trade in environmental goods and services, and on specifications for measurement of embedded carbon and emissions, which may disadvantage developing countries. Several essays in this volume highlight different areas in which climate law and policy are already having to take account of World Trade Organization (WTO) agreements on trade and market regulation, including on trade restrictions, subsidies, taxes, and carbon labeling. Linkage between climate mitigation and trade law is inescapable, and offers both attractions and threats from the viewpoint of developing countries. This essay focuses first on major concerns developing countries have about such linkages, and then proposes five specific ways to ameliorate these concerns.

What Are Developing Countries' Concerns with Trade and Climate Linkages?

The primary motivation for using trade measures is the fear of industrial competition from non-participating countries. A secondary preoccupation is that emissions will increase elsewhere due to carbon leakage if firms relocate to countries with lower environmental standards. While the evidence for leakage and competitiveness threats is mixed—and restricted to a few sectors—proposals for linking the trade and climate regimes have gained momentum.

From the perspective of developing countries, any serious attempts or threats to affect trade through climate measures prompt a variety of concerns. Four sets of concerns about the legality and governance of such measures can be noted here.

First, protectionism may be disguised as climate-friendly policies. The incentive to exaggerate the extent of carbon leakage is strong, and special interests could hijack trade measures for protectionist purposes.

Second, although the WTO's Technical Barriers to Trade (TBT) Agreement governs standards and labeling, it does not apply to private businesses. Therefore, firm-led decisions to regulate emissions by introducing

labeling requirements and standards could adversely affect exports without the protection of WTO rules.

Third, the relaxation of trade barriers against environmental goods and services (EGS) may be applied unevenly and disproportionately benefit developed countries. The liberalization of trade in EGS, which includes products and services that yield environmental benefits, such as catalytic converters and consultancy services on wastewater management, is part of the Doha Round of negotiations. The global market in EGS is estimated to be about USD 550 billion. Developing countries, on average, have low applied tariffs against EGS and view demands to reduce barriers as a strategy of rich countries to promote new industrial sectors.¹ Yet, when it comes to their export interests in energy-related goods, developing countries face trade barriers abroad. Brazil's dispute against a ban on ethanol exports to the United States or China facing anti-dumping duties against energy-saving light bulbs in the European Union (EU) for several years are cases in point.

Fourth, since developing countries demand technology transfer as a condition for reducing emissions, they have concerns about how stringently intellectual property rights (IPRs) are enforced by the trade regime. Stringent IPRs could increase the costs of technology, disadvantage firms in developing countries, and undermine domestic absorptive capacity for new technologies. Compulsory licensing, exemptions from patentability, forgoing patents on publicly funded research, and multilateral funds to buy out patents are means of facilitating technology transfer that developing countries might advocate in the trade and climate regimes.

Suggestions for Trade Policy Monitoring

Concerns about emissions leakage, industrial competitiveness, and market access cannot be resolved without confidence in the measurement, monitoring, and enforcement mechanisms in the trade and climate regimes and within all states involved. Compliance with negotiated rules is contingent on credible monitoring: states are likely to renege on commitments if they believe that their actions will not be easily detected or monitored. In light of the preceding discussion, here are five suggestions for strengthening trade monitoring and environmental measurements.

1. Recognize Capacity Challenges for Monitoring Trade Measures

A first line of defense against illegitimate trade measures is regular monitoring. Export-oriented firms could keep a lookout for policy changes abroad, but effective monitoring requires institutional capacity. Many countries collect commercial intelligence through trade attachés in embassies or via industry bodies. A more formalized process would include a dedicated state agency with the mandate for monitoring trade barriers. The most institutionalized approach at the country level involves regular publication of foreign trade barriers reports, which when disseminated widely give valuable information on existing and anticipated measures.

Few countries, however, have the kind of institutional capacity needed to monitor climate-related trade measures. A recent analysis of seventy developed, developing, and least developed countries (just under half the WTO's membership) found that only half of them collected commercial intelligence on a regular basis, and less than a fifth published regular reports on foreign trade barriers (Figure 32.1).² A few large developing countries have built capacity for monitoring specific areas (say, Brazil

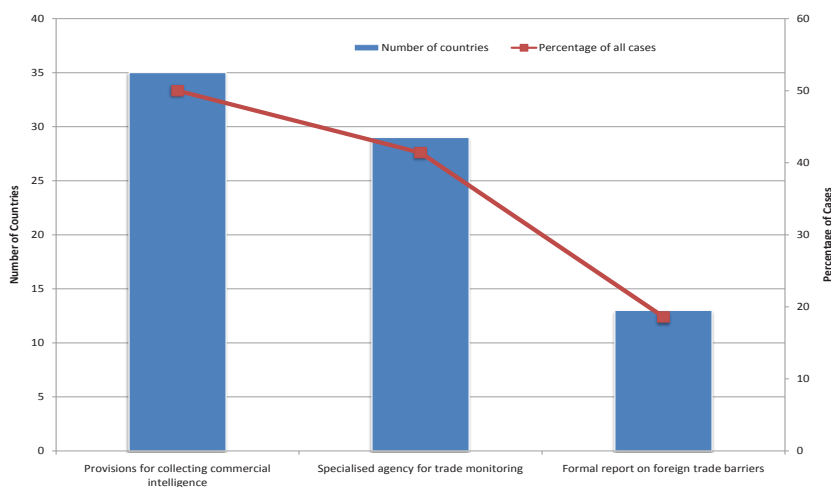


Fig. 32.1. Few WTO members have the capacity to monitor foreign trade barriers (2008). (Source: Ghosh, "See No Evil, Speak No Evil? The WTO, the Trade Policy Review Mechanism, and Developing Countries," D.Phil. Thesis, Oxford University, 2008)

in agriculture and India for anti-dumping measures). Wider use of trade measures would require a requisite increase in capacity for developing countries in general.

2. Strengthen WTO Monitoring of Protectionist Measures

A more efficient alternative to country-based monitoring is institutional monitoring by the WTO. The WTO’s own Trade Policy Review Mechanism (TPRM) periodically reviews member states, based on WTO reports, government reports, and review meetings in which all members can participate. Although reviews are more frequent for the largest trading powers, even those only occur in two-year intervals. More significantly, thanks to resource limitations and a growing membership, the WTO has never managed to conduct the requisite number of reviews as required each year (Figure 32.2). Further, in only half the cases where developing

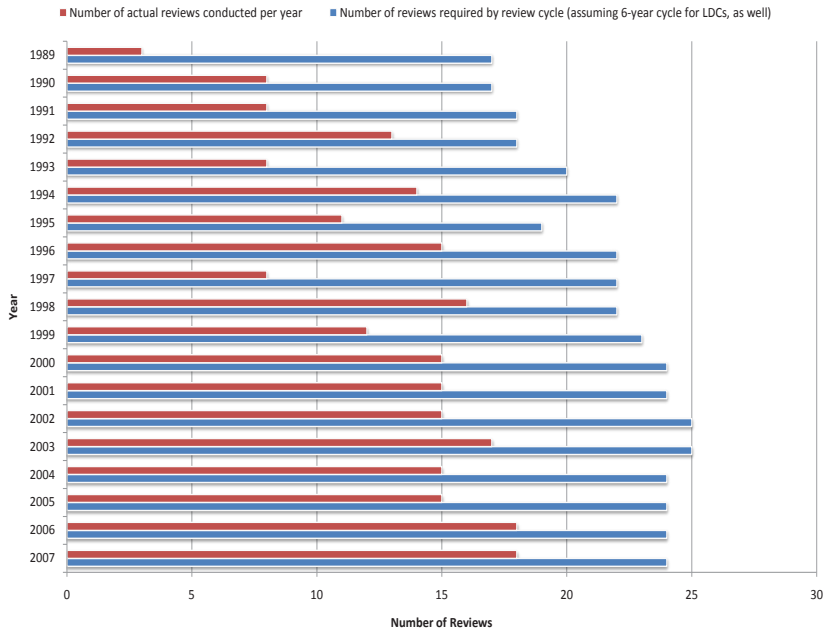


Fig. 32.2. The WTO’s capacity to monitor trade policies is constrained. (Source: Ghosh, “See No Evil, Speak No Evil? The WTO, the Trade Policy Review Mechanism, and Developing Countries,” D.Phil. Thesis, Oxford University, 2008)

countries formally challenged trade measures did the reports warn about the contentious measures in advance of the disputes. With this record, it is obvious that the monitoring of climate-related trade measures cannot be accomplished with existing resources or with the existing mandate in the WTO.

The WTO also has a system of notifications, whereby countries submit information every time new trade measures are introduced. But even rich countries often fail to submit notifications on time. Developing countries fear that gaps in notifications are deliberate strategies to withhold information.

More credible monitoring of climate-related measures would need, first and foremost, an increase in the resources allocated to the WTO. Increased resources would allow for more frequent monitoring by the TBT Committee and the Committee on Trade and Environment and more comprehensive reports under the TPRM. A second necessary reform would be to strengthen the notifications process by requiring countries to notify the WTO of climate-related measures prior to implementing them. This procedure has been adopted in new monitoring mechanisms within the WTO dealing with sanitary and phytosanitary standards (SPS) and regional trade agreements. A third requirement would be to ask countries to explain the rationale behind planned measures (again adopted for SPS monitoring). This would increase transparency, limit the cost to developing nations of challenging potentially unfair trade measures, and facilitate the ability of the wider WTO membership to apply pressure against contentious measures.

3. Define Categories for Environmental Goods and Services Clearly

To liberalize trade in EGS, environmental goods and services would need to be clearly defined. The WTO uses a six-digit level of product classification, which makes it difficult to distinguish between environmental goods and other products. It is also difficult to determine which products to liberalize when the product has multiple uses. Developing countries are unwilling to open up entire product categories to import competition. Similarly, trade measures to counter leakage would have to be targeted precisely at those products whose production methods are proven to adopt lower environmental standards. Poorly targeted measures would otherwise face charges of trade discrimination.

4. Overcome Measurement Challenges of Embodied Carbon across the Supply Chain

Another type of measurement difficulty arises from notions of embodied carbon, i.e., the amount of CO₂ emitted during each stage of a product's manufacturing and distribution to consumers. No standard methodology for this measurement has been adopted. Top-down analysis is difficult because sectoral averages could differ from the specific carbon-intensity of individual products. On the other hand, the level of detail required in bottom-up process examinations would impose capacity burdens on developing countries. Thus, even if methodologies were agreed upon, the capacity question would still need attention.

5. Build Developing Countries' Capacity to Monitor Emissions

The final issue relates more directly to the capacity of developing countries to measure emissions. Non-Annex I (NAI) parties submit inventories as part of their national communications, which do not include time series data and cover only CO₂, methane, and nitrous oxide. To date, although 134 NAI parties have submitted their first communications, even some of the largest developing country emitters have not submitted further reports (Figure 32.3). This is partly a strategic move to withhold information until a climate deal is agreed. But for many other developing countries, the self-reporting structure is under strain.

Building capacity to monitor emissions is not going to be easy. The United Nations Framework Convention on Climate Change's (UNFCCC) Consultative Group of Experts, which provided technical support to developing countries, allocated only USD 100,000 per country to monitor emissions. Its mandate expired in 2007 and was renewed only in June 2009. Although new centralized satellite technologies could measure emissions anywhere in the world, there is still a case for capacity building within individual countries. The climate regime is complex, and parties' willingness to participate would, in part, depend on their ability to monitor and verify data on their own without having to depend solely on data generated by rich countries or international organizations.

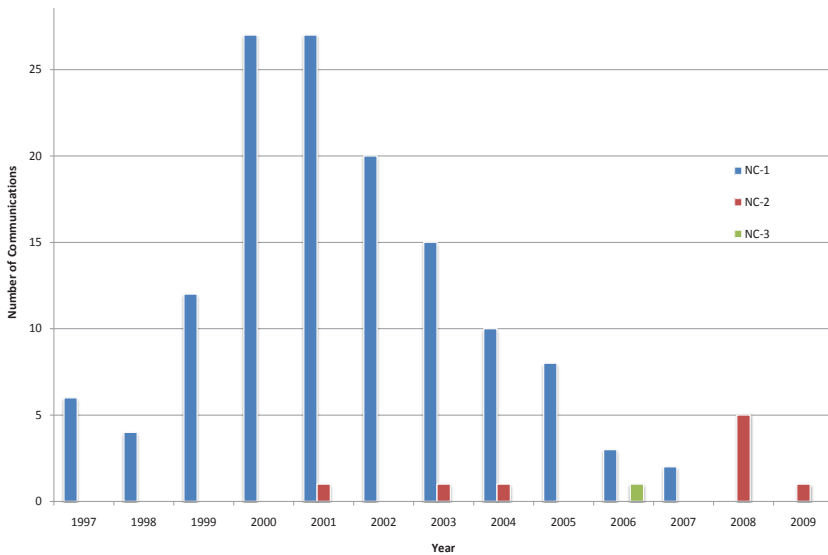


Fig. 32.3. Few Non-Annex I parties have submitted more than one national communication. (Source: Author analysis)

Conclusion

WTO rules and institutions are likely to become involved with climate rules in numerous ways. Developing countries have many concerns which, if not properly addressed, may limit the effectiveness or fairness of any global climate change agreement and of the WTO. It will be impossible to address many of these concerns unless transparent, effective, and fair monitoring systems are put into place. Otherwise, so-called efficient outcomes in climate negotiations might stumble during the implementation, monitoring, and enforcement stages.

FURTHER READING

For an overarching paper on links between environmental and trade policy, see Jeffrey Frankel, *Global Environmental Policy and Global Trade Policy* (Harvard Project on International Climate Agreements, October 2008).

A recent proposal suggesting positive linkages between standards and access to trade markets: Christian Barry and Sanjay Reddy, *International Trade and Labor Standards: A Proposal for Linkage* (New York: Columbia University Press, 2008).

For an in-depth analysis of the workings of the TPRM, see Arunabha Ghosh, "Information gaps, information systems, and the WTO's Trade Policy Review Mechanism," *Global Economic Governance Working Paper 2008/40*, (Oxford, May 2008).

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Chapter 33

Carbon Footprint Labeling in
Climate Finance
*Governance and Trade Challenges
of Calculating Products’
Carbon Content*

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Key Points

- Carbon footprint labeling (CFL) attempts to quantify the GHG emissions attributable to a product throughout its life cycle, from the harvesting of raw materials through product disposal.
- CFL could impose an increased regulatory burden on small producers and a relatively greater abatement burden on developing countries.
- A number of CFL standards have already emerged, backed by governments, NGOs, industry groups, and the ISO. Divergent choices in calculation methodologies (what emissions a CFL covers and how they are measured) have contributed to this multiplicity.
- Governments seeking to ensure that mandatory national CFL programs are WTO-compliant should adopt a sound international CFL standard, created with wide national and stakeholder participation and sufficiently flexible to accommodate individualized producer data.

Yesterday, it was trans-fat; today, carbon footprint labels are proliferating on grocery store shelves. Carbon footprint labels purport to quantify the embodied carbon of a given product: the total quantity of carbon dioxide and (in some cases) other greenhouse gases (GHG) for which a single product—a pear, a cell phone, a t-shirt—is responsible over the course of its life cycle, from creation through use and disposal. Carbon footprint labeling (CFL) is a new phenomenon but has already staked a place in the climate regulatory landscape. Viewed most optimistically, CFL harnesses consumer demand for low-carbon products to encourage emissions reductions down supply chains. Critics, however, see CFL as a form of disguised protectionism, devised by industry or well-meaning non-governmental organizations (NGOs) and promoted by governments in the developed North to counter the comparative advantage of producers in the global South subject to less stringent emissions controls.

CFL may serve as a valuable informational tool to promote awareness about products' emissions costs. Early evidence suggests that product footprint labeling helps firms to identify CO₂ emissions hotspots along supply chains. CFL is also intended, however, to attach a cost to greenhouse gas emissions. If consumers respond to carbon labels in purchasing decisions, CFL should result in a loss of market share for high-emissions goods and services, and create market access (or advantage) for goods and services with low carbon content. By one view, this is a form of protectionism—at least if CFL is mandated by governments. The difficulty of quantifying carbon content compounds the risk that CFL might distort markets, or strain other climate law regimes by creating separate incentives for emissions reductions. Critics also fear that carbon labels will distract from other externalities of production and consumption.

Given their regulatory and distributional implications, the development of CFL standards deserves close attention. Who decides how to calculate embodied carbon? NGOs and industry have taken the lead to date. Their labeling standards could, through market impact down supply chains, have significant effects on climate finance—yet they operate largely independently of international climate agreements and official state measures. This situation raises important questions about the governance and accountability of CFL standardization processes. It also makes the analysis of CFL's legality under the World Trade Organization's (WTO) trade regulatory disciplines complex, since it depends, in part, on whether labeling programs are mandated or promoted by governments or established solely by non-state actors.

The Rise of Carbon Footprint Labeling

Developing a carbon label is no simple task. Labels take different forms. Comparative labels simply present information about a product's embodied emissions, like a food nutrition label. Endorsement labels signify that a product's embodied emissions fall below a given threshold. Organizations that issue labels may require emissions reductions or third-party verification as a condition of the label's use.

Calculating the emissions for which a single product is responsible requires choices about what to measure (the "system boundary") and how. Will the calculation include emissions from machinery used to harvest raw materials? From factories that produce the machinery? From land use change? Worker transport? What level of data specificity will be required? A Life Cycle Analysis approach requires individual source data, while environmental input-output (EIO) analysis uses sector-level national averages. Label designers must also decide how to account for the fact that the emissions might vary according to the user's choices (e.g., to recycle or not) and context (e.g., local energy grid).

Critics contend that these and other conundrums make it impossible to accurately quantify a product's carbon content. The variables are simply too uncertain, and the methodological choices too arbitrary. A myopic fixation on carbon footprints, moreover, may distract from other environmental and social costs of production. Others argue that complex, costly labeling standards impose a disproportionate burden on small producers and circumvent the principle of common-but-differentiated responsibilities, since—international treaty agreements notwithstanding—producers in developing economies must either monitor and reduce emissions or lose market share.

Despite such concerns, carbon labels are multiplying. While other environmental and social labeling programs took decades to evolve, CFL has become an international phenomenon in the space of a few years. The pioneer initiatives have been hybrid private-public projects, though some NGO and industry efforts are progressing with no state involvement at all.

The most advanced CFL regime is Publicly Available Standard (PAS) 2050, designed by the British Standards Institute in collaboration with the British government's Department for Environment, Food, and Rural Affairs (DEFRA) and the Carbon Trust, a government-funded NGO. Two other hybrid CFL initiatives are vying for international status: One launched by the Greenhouse Gas Protocol (a partnership between the

NGO World Resources Institute and the industry collective World Business Council for Sustainable Development), which developed a successful set of corporate accounting standards for GHG emissions; the other by the International Organization for Standardization (ISO) (which essentially adopted the GHG Protocol's corporate emissions accounting standard in 2006).

At the national level, ten German corporations have joined forces with the World Wide Fund for Nature (WWF) and two academic institutes to develop a labeling standard. The US-based NGO Carbon Fund and Canadian NGO CarbonCounted are certifying low-carbon products. Swedish organic standards association Krav has a label underway. Industry-sponsored labels include those developed by French supermarket chains Casino and E. Leclerc and Switzerland's Migros.

Governments are increasingly promoting CFL. Japan and South Korea have both announced plans for government-run labeling regimes. The British government has been integrally involved in the development of PAS 2050; the Greenhouse Gas Protocol's Steering Committee includes government agencies from a handful of countries; and the ISO is composed of national delegations. The European Parliament has called for the development of data to enable GHG footprint labeling (including on imports) and is developing a Carbon Footprint Measurement Toolkit. If the US Congress passes legislation requiring border tax adjustments based on products' embodied carbon, it will have to address carbon footprinting as well. The California legislature, finally, is considering the proposed Carbon Labeling Act, which would require the state to create and implement a (voluntary) carbon labeling program.

Harmonization of CFL Standards?

The short history of CFL illustrates conflicting trends: diversification among labels and a drive towards uniformity. Almost every institution that has launched its own footprinting initiative has simultaneously pled for harmonization. There is no strong evidence of convergence thus far, but many CFL standards overlap, and market and political pressures may propel a few—or even a single standard—to preeminence. The emergence of a dominant CFL standard could lower implementation costs and mitigate CFL's potentially disproportionate burden on small producers and developing economies. The precise terms of any such standard, however,

would have varying competitiveness implications for different countries and firms.

While PAS 2050 may provide a basis for a universal standard, the GHG Protocol and ISO appear most likely to achieve it. The GHG Protocol's explicit objective is to create a harmonized international standard, which it hopes the ISO will adopt. Given the success of the GHG Protocol and ISO accounting standards, the ISO's international profile, and the GHG Protocol's careful multi-stakeholder process, a GHG Protocol/ISO product footprinting standard could well dominate the field.

CFL and the WTO

The WTO TBT Agreement requires that technical standards, which would include carbon footprint labeling standards, that are adopted or mandated by governments must conform to the procedural and substantive requirements norms for standard setting provided in the TBT Annex 3 Code of Good Practice. Technical regulations are required to be non-discriminatory and "not more trade-restrictive than necessary to fulfill a legitimate objective." In the case of domestic or regional voluntary standards adopted by non-governmental bodies, WTO members are obliged to take "such reasonable measures as are available to them" to ensure compliance with Annex 3 norms; this obligation does not extend to international standards. It is unclear what degree of government involvement or endorsement might be sufficient to make the TBT disciplines directly applicable to standard setting by a private body. Would a private program be subject to challenge if a government sets mandatory criteria for, or regulates access to, a carbon label? Would the UK's sponsorship of PAS 2050 (via the Carbon Trust) suffice? WTO law and jurisprudence offer scant guidance on these questions.

CFL standards may also engage TBT provisions establishing that when a WTO member country bases a technical regulation on "relevant international standards" set by a "recognized body," it enjoys a presumption of legality. The TBT does not define "relevant international standard" or "recognized" standard-setting body. Nor does it address a situation of competing standards. A WTO member that adopted a private CFL standard could well seek to invoke the presumption, requiring a WTO dispute settlement panel and the Appellate Body to clarify these issues. Given the economic and environmental stakes of CFL standard-setting, it would be

appropriate for a WTO tribunal tasked with deciding whether or not to extend a presumption to a private CFL standard to determine whether the standard-setting process that produced it is transparent, whether it allows for meaningful participation by affected interests, and whether the standard-setting body justifies decisions by public reasons and evidence. Other TBT provisions that might be relevant to the legitimacy of CFL regimes include the Agreement's code on conformity assessment procedures; its exhortation to allow market access to goods that comply with exporting countries' regulatory standards; and the obligation of developed countries to assist developing country producers to comply with labeling requirements.

Alternatively, a government might use CFL standards or methodologies to exclude certain products with high carbon footprints, or impose a tax on products with heavier footprints. Such a regulation would not only be subject to the TBT disciplines but also potentially be subject to challenge as discriminatory under the GATT. The central issue would be whether products with heavier footprints are "like" similar products with lighter footprints. If so, they must be treated the same unless the government imposing the label can justify the disparate treatment. The question is whether the methods by which a product is produced, consumed, and disposed of—as opposed to the physical characteristics of the product itself—are relevant in determining likeness. Given that consumers may differentiate between products with varying levels of embodied emissions, there is a reasonable argument that heavy-footprint products are not "like" light-footprint products under the GATT. Even if the products at issue were deemed like, government measures treating them differently might still pass muster on a showing that the measures are necessary to protect human, animal, or plant life or relate to the conservation of exhaustible natural resources. Such a justification would require, among other criteria, that a labeling regime be procedurally fair and flexible enough to accommodate divergent practices among producers. An Environmental Input-Output (EIO) methodology based on national sectoral emissions averages might fail.

Conclusion

Whether carbon labels come to function as de facto conditionalities on investment or just help to shape a low-carbon culture, it seems clear that

they will remain one element of the emerging matrix of climate finance. The development of carbon labels by hybrid public-private bodies presents a challenge for accountability in international governance. Given the special trade stature of international standards, inclusiveness in international CFL initiatives is paramount. Broad participation might help also mitigate CFL's distributional impact. These dictates of good governance also align with the objective of developing WTO-compliant national labeling regimes. The closer a labeling requirement is to a widely endorsed international standard, and the more adaptable to individual producer data, the more likely the labeling program will be to pass muster under WTO law. That general principle in mind, carbon footprint labeling is a new phenomenon. Climate professionals will have to continue to assess the effect of carbon labels on other emissions reductions regimes, as well as their trade law status, as labeling regimes evolve.

FURTHER READING

- A. Appleton, "Private Climate Change Standards and Labelling Schemes under the WTO Agreement on Technical Barriers to Trade," *World Trade Forum* (2007).
- Paul Brenton et al., "Carbon Labeling and Low-Income Country Exports: A Review of the Development Issues," 27 *Development Policy Review* 243 (2009).
- Jiang Kejun et al., *Embedded Carbon in Traded Goods*, ICTSD Background Paper (2008).

