Standards, Labelling and Certification

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Acronyms

CDM	Clean Development Mechanism
CLASP	Collaborative Labeling and Appliance Standards Program
EU	European Union
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GHG	greenhouse gas
IEA	International Energy Agency
ISO	International Organization for Standardization
MFN	most favoured nation
OECD	Organisation for Economic Co-operation and Development
PPMs	processes and production methods
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
WTO	World Trade Organization

Summary of key issues, challenges:

- This paper looks at two kinds of standards and labels relevant to climate change and trade: product standards and labels, and those based on processes and production methods (PPMs).
- Product standards and labels, both voluntary and mandatory, are widely used around the world to address market information failures, principal agent problems and other barriers to dissemination of high efficiency products.
- These instruments have a huge potential for reducing energy use and thereby addressing climate change. The ongoing mandatory switch to compact fluorescent lighting in a handful of countries will eventually reduce more GHG emissions than the entire current roster of CDM projects. Moreover, these kinds of emission reductions stand out as highly cost effective, most having negative overall costs from a life-cycle perspective.
- Trade policy makers should treat these instruments with deference, and not automatically assume that they are unnecessary barriers to trade. Moreover, there is considerable scope for both facilitating trade and benefiting the environment by harmonizing measurement, testing, certification, and accreditation procedures internationally.
- Standards and labels based on PPMs (both voluntary and mandatory) are increasingly being considered or implemented as tools to address climate change, since the way in which goods are produced can have widely varying climate change impacts. They are typically intended to inform consumers and influence their behaviour, but can also address carbon leakage or the potential loss of competitiveness.
- Such measures have been controversial in the WTO context. PPM-based standards are typically (but not exclusively) levied by Northern importers against Southern exports, may involve costly changes to production processes, and may provide scope for protectionism. In all of these facets, however, they are not fundamentally different from product standards.
- PPM-based standards do, however, have a different history under trade law from productbased standards, a key question being whether governments may distinguish between products based on how they were produced. Case law on GATT's general exceptions has cleared the way for PPM-based standards, but with a number of ancillary requirements to reduce the scope for protectionism.

Summary of concluding thoughts:

- There's a great need for international efforts to harmonize product standard-related procedures and norms in a way that both facilitates trade and benefits the environment. That said, such efforts will be difficult, and harmonization should not come at the expense of flexibility for ambition by individual states.
- Both product and PPM-based standards can present obstacles for developing country exporters, who need better information on the standards and regulations relevant to their products. WTO practice on notification has been unsatisfactory and needs to be improved to target the needs of developing countries.
- Technical and financial assistance may be necessary for developing country exporters to meet new standards, and should be provided by developed countries as per their obligations under the WTO and UNFCCC.
- Any efforts to promote standards, whether voluntary or mandatory, should involve a wide variety of stakeholders including, *inter alia*, affected exporters.

Introduction

This paper will look at two types of standards: product standards that describe a good's characteristics, such as energy efficiency; and standards that describe how a good was made, based on processes and production methods (PPMs), such as carbon-intensity for manufacturing. For both types, the paper asks how they might be better used to aid efforts to address climate change, and what types of obstacles might need to be considered. In the area of process standards, the obstacles that trade policy might address are primarily challenges of international cooperation. In the area of PPM-based standards, in addition to the lack of international cooperation, the obstacles also relate to international trade law. Each will be considered below.

Product energy performance standards and labelling

Equipment standards and labelling schemes date back to at least the 1960s when France first applied a refrigerator efficiency standard, and became more popular after the first and second energy crises in the 1970s with the United States, Russia and Canada developing regulations for some goods. However, it wasn't until the early 1990s that such instruments started to become more widespread and the number of products addressed broadened. At least 61 countries—representing 80 per cent of the world's population—are currently implementing energy performance standards or labels for at least one product, and they are increasingly being applied to broad portfolios of energy-using products. Most major economies have implemented a range of minimum energy performance standards that prevent low-efficiency appliances from being sold on the market. Nor are they alone; Egypt, Japan, Korea, Thailand, China, Brazil, Russia, Iran, Israel, Columbia, the Philippines, Tunisia, South Africa, Bahrain, Turkey and a great many other economies currently have some blend of standards and labelling in place, with many more such instruments being developed.

Justification and design issues

Standards and labelling schemes serve to correct market information failures and principal agent problems,[1] which hinder the ability of consumers to identify or access energy-using products with optimized energy costs and environmental performance characteristics.

Energy labels allow consumers to know how energy efficient a product is, and to factor this into their purchasing decisions. For many energy-using products, the energy cost over the lifetime of the product is of a similar, or greater, magnitude to the cost of purchasing the product in the first place. This is a very important factor in the economic consideration of a product's service. In the absence of energy performance labelling, manufacturers have little commercial incentive to minimize a product's energy consumption. Prior to the introduction of energy labelling in the European Union, the least efficient refrigerators on the market used eight times more energy than the most efficient models to provide the same cooling service, and lifetime in-use energy costs exceeded the purchase price several times over.

1 Principal agent barriers come in several forms, but derive from the separation of the individual who is procuring the energy-using equipment from the one who is paying the bill. This leads in many cases to a so called "split incentive," where it is not in the interest of the procurer to pay any additional costs required for more efficient equipment, as they will not see the benefit from a reduced energy bill. The most widely recognized case is between landlords (who pay for efficiency) and tenants (who pay the power bills), but split incentives can also occur within companies where capital acquisition management is often done separately from operations and maintenance management.

Labels can be voluntary or mandatory and can be of a so-called comparative type or an endorsement type. Endorsement labels are the simplest, are invariably voluntary and simply endorse some aspect of the product's performance. The most well-known example is the *Energy Star* label that is applied in many parts of the world on products that meet superior energy-efficiency performance levels. As their name suggests, "information labels" provide more information about the energy and related product performance levels and are intended to provide enough information for consumers to make more informed product choices. They can be voluntary or mandatory and they can be of a straightforward information type or be of a "comparative" type. In the former case they may simply report how much energy a product uses whereas in the latter case, they would also compare that to the energy used by competing products providing an equivalent service level. Experience has shown that simple information labels are much less informative to consumers than comparative labels and are less likely to have an impact.

Almost all current information labels are of the comparative type and, within these, there are two broad categories: those that use "categorical" scales to illustrate the comparative energy performance of the products; and those that use continuous or "sliding" scales. Continuous scales are used in the older mandatory energy-labelling schemes adopted in the United States and Canada. They apply a horizontal scale that indicates the least and most efficient products on the market at each end and then an arrow to identify the exact performance of the labelled product within the scale. Categorical labels—first applied in the Australian and Thai energy labels, then adopted in the Korean, EU, Iranian, Brazilian, Chinese, Japanese and other labelling schemes—indicate comparative energy performance by a graded "categorical" efficiency scale such as numbers, letters or stars. Several labels use a 1 to 5 numerical scale, many use an A to G letter scale and some use a 1 to 5 or 6 star scale.

Energy efficiency standards are regulations that require certain energy performance levels to be met before a product can be sold. In the 1980s and 1990s, many economies applied these on a voluntary basis, but compliance rates were generally insufficient and there is now a general move away from voluntary standards towards mandatory ones. Such standards can induce significant cost-effective energy savings and related reductions in environmental impacts that would not otherwise be achieved due to principal agent problems and other market imperfections such as high knowledge transfer costs (IEA, 2007a).

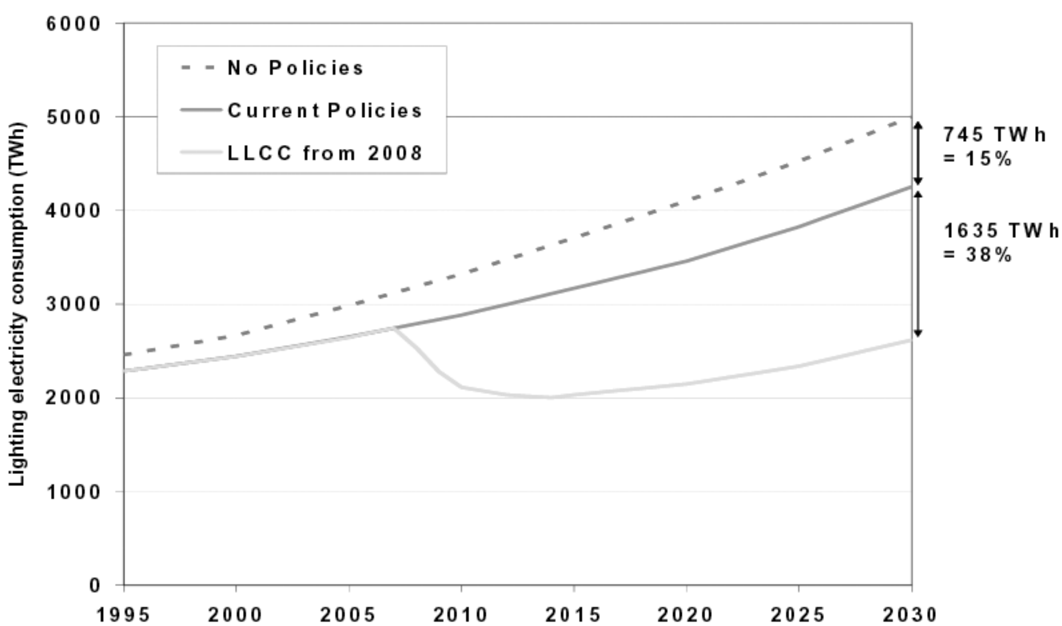
To simplify compliance activities, most economies apply mandated minimum energy performance levels. Some however, including the EU, have used a mix of instruments such as a combination of mandated minimum levels and negotiated voluntary fleet-average performance levels linked to the share of the market within each energy label performance category. Several countries, including the United States, Canada, Europe and China, conduct technical and economic analyses to determine the extent to which it is possible to design products to meet higher energy efficiency levels and to estimate the impacts of mandated efficiency increases on product costs, life-cycle costs and the environment. This information is used in deciding where efficiency levels should be set. Most countries applying energy performance standards also apply energy labels so that the energy performance standards remove less efficient products from the market while the energy labels encourage the sales of higher efficiency products. This can have a dynamic market transformational impact where the performance thresholds applied in the standards and labels are periodically ratcheted upwards as cost-effective higher efficiency products gain market share.

Impacts and potentials

Standards and labelling schemes have a significant potential to reduce energy use and thereby address climate change. Impact evaluations have shown that they are generally highly effective in inducing significant low-cost energy savings. They have also shown that much higher cost-effective savings could be realized were the standards and labelling efforts to be more ambitious, have wider product coverage and be better administered. Current standards and labelling schemes within the OECD are generally credited with reducing total energy bills across the affected broad end-user sectors, e.g., the residential sector, by between 10 and 20 per cent (IEA, 2003, 2006, 2007b; CLASP, 2007). Savings for individual product types can be much higher, up to 70 per cent in the case of refrigerators in the United States (CLASP, 2007). While *ex-ante* estimates of cost-effectiveness have generally predicted highly cost-effective energy savings from such measures; *ex-post* evaluations have found that these have often under-estimated the overall cost-effectiveness of the savings because they have over-estimated the impact of the standards and labels on product prices. In many cases, it has not been possible to detect product price increases induced through standards and labelling regulations (IEA, 2007b). Even if the *ex-ante* estimates are accepted, however, the value of the energy savings is generally many times that of the increase in product costs and, as a result, the life-cycle costs of products have fallen where effective standards and labels have been implemented. The associated GHG abatement costs are therefore negative for consumers and society as a whole and are typically among the most cost-effective policy-induced abatement opportunities.

For the most part, current requirements are far from the point at which the marginal cost of saving energy would match the marginal cost of energy supply and are still further from reflecting the marginal value of carbon dioxide abatement. As a result, governments remain ambitious about such regulatory measures in order to better mine the economic, energy security and environmental benefits they bring. Figure 1 shows how much electricity has been consumed globally by lighting, how much would have been consumed without the current set of standards and labelling and related policy measures (such as building codes and fiscal/financial incentives), and how much *more* could be saved using existing technologies if all new lighting products sold into the market had an efficiency level that minimized life-cycle costs to the end-users (LLCC, or lowest life-cycle cost).

Figure 1. Global lighting electricity use



Source: IEA, 2006.

Lighting currently accounts for 19 per cent of global electricity demand and attainment of the least-life-cycle cost scenario from 2008 to 2030 would cumulatively save end-users US$1.6 trillion, avoid the emissions of 16.6 billion tonnes of carbon dioxide at a net abatement cost of negative US$161 per tonne, and allow global lighting service levels to increase by over 80 per cent. For these reasons, there has been a flurry of activity to intensify lighting energy efficiency efforts, most notably such that almost all OECD economies and many non-OECD ones are in the process of phasing-out inefficient incandescent lighting. Even allowing for the fact that efforts have only begun in this domain since 2007–2008, the projected GHG savings from this single product measure are of a similar scale to all the savings booked into the CDM pipeline to 2012, and are greater over the longer term. Substantial untapped cost-effective savings potentials exist for a plethora of other energy using products, which collectively account for a significant proportion of global energy use and GHG emissions, including household appliances, commercial equipment, industrial electric motors and drives, vehicles and buildings. As a result, standards and labelling efforts are being intensified in all these domains.

Implications for trade policy

Efficiency standards and labels are reported to be the single largest cause of national notifications to the WTO under the Agreement on Technical Barriers to Trade (TBT Agreement). Given their importance in stimulating highly cost-effective energy and emissions savings, this is likely to continue. Whatever costs these regulations imply for industry and trade, it can be argued that they are generally less than the value of the energy savings they foster, and so there is a strong argument that trade regimes should not focus on discouraging or prohibiting such measures as non-tariff barriers to trade.

That said, there is much that countries could do to facilitate trade while respecting the need for economies to be able to apply efficiency standards and labelling regulations. At present, there are varying levels of international coordination on the procedures to be used to measure energy consumption and to define energy efficiency. In many cases, international measurement and methodological standards, such as those issued by the ISO or International Electrotechnical Commission, are used; but national or regional measurement and methodological standards are also still commonly applied for some products. Often these reflect historical differences in standardization that tend to encourage market-specific differences in product design features to evolve and hence are not simple to address retrospectively. In some cases, they reflect differences in local product usage conditions such as environmental or prevalent behavioural differences, which can reduce the applicability of internationally harmonized standards to specific markets. For products that have climate-invariant energy usage, such as personal computers and televisions, there is little technical reason for nationally specific differences in energy test procedures. However, for those that are quite sensitive to climate, such as refrigerators and air conditioners, there is greater justification. Nonetheless, even these products contain a number of non-climate sensitive components, for which much could be done to standardize test procedures

Nor are test procedures and methodologies the only area offering potential for closer international alignment. There are often important differences in the systems used to certify product performance levels and to accredit certification and testing agencies. While most economies use certification and accreditation processes that are in line with broad recommendations issued by the ISO, many processes involve locally specific elements. As a result, test results are not recognized in all markets and reporting requirements vary.

In principle, efforts could be strengthened to minimize unnecessary differences in energy performance test procedures, certification, accreditation and compliance regimes to simplify the number of different tasks a manufacturer has to undertake in order to sell products into multiple international markets. Such steps could be taken in ways that protect the environmental and economic validity of the standards and labelling schemes while reducing compliance costs for producers and ultimately product costs for consumers.

While trade negotiators may wish to focus attention on these opportunities, they should not underestimate the complexity involved in resolving the issues, nor the scale of resources and time that would be required for progress to be achieved. The cause of differences usually varies according to the product concerned and its associated product-specific technical issues. Differences in certification and accreditation can also derive from a varying degree of importance placed on the need to ensure the validity of product performance claims and on the strategies adopted to address this. Any potential alignment process would need to recognize that technical competences reside among diverse groups addressing these issues and to ensure that these were represented in any barrier removal process to ensure that legitimate functional distinctions were maintained and the overall integrity of standards and labelling schemes was ensured. Furthermore, there is a powerful argument that alignment should not come at the expense of the relevance and ambition of the energy performance standards and labels, which implies that alignment efforts should not be unwieldy nor override the current processes.

Process and production methods-based standards

As described above, standards, labelling schemes and certification programs—mandatory or voluntary—have been particularly useful tools to promote energy efficient products and provide consumers with information about the energy efficiency of products and related savings. In addition to these sorts of standards, governments, the private sector and NGOs are elaborating a variety of environmental and social standards, labels and certification programs that look at the entire life-cycle or carbon footprint of a product. This approach involves looking at products' processes and production methods (PPMs), and relates to the manner in which products are made and natural resources are extracted, grown or harvested.

The premise is that the production method applied to produce a product can negatively affect the environment and human health. In the context of climate change, the amount of GHGs emitted into the atmosphere from the production of a product depends, in large part, on the manner in which it was produced and on how the energy used in the production process is generated. Most countries have adopted policies and measures aimed at avoiding or mitigating the harmful effects caused in the process of production, often including measures to reduce GHG emissions. However, the policies and regulatory approaches vary greatly across the globe. This has several consequences:

- First, the production of a product can lead to different levels of GHG emissions in different countries. The contribution to global warming by the producer can therefore vary depending on the regulatory framework of a country and on the production method actually applied (since even in absence of policies and regulatory frameworks, a producer can choose a low- or high-carbon production method).
- Second, differences in regulatory frameworks can have competitiveness effects because production of the same type of product can be more costly in those countries taking measures to limit GHG emissions during production.
- Third, because the end product is largely independent of the production method used for its production, it is usually impossible for consumers to know anything about the product's total contribution to climate change.

As a response to these concerns, many countries are considering the adoption of trade-related measures that take into account the method of production (PPM-based measures). These can include import and export restrictions on products produced in a certain way (standards); labelling requirements regarding the production method used to produce a product; tax schemes based on production methods; and border tax adjustments levied on imported products to counter-balance PPM-based domestic taxation or regulation.

While the use of trade-related PPM-based measures is not new, their profile has grown over the past two years because of the international community's renewed recognition of the need to address climate change challenges. In particular, the competitiveness concerns of producers in those countries that have committed to GHG emissions cuts have provoked a discussion of the need to level the playing field. Moreover, policy-makers have voiced concerns that imposing high costs on domestic producers may cause production of carbon-intensive industries to shift to countries lacking regulation to control GHG emissions. Such "leakage" of emissions abroad, it is argued, could undermine the goals of an international climate change regime.

Recent proposals for national and regional carbon controls have included provisions aimed at reducing the impacts of the regulation on domestic competitiveness, as well as creating incentives for foreign countries to implement their own carbon restrictions and prevent leakage.[2] Border tax adjustments are one option, where a state imposes the domestic carbon or energy tax on imported products. A similar effect can be achieved within cap-and-trade systems by requiring the purchase of carbon allowances or credits at the border. Exporters from countries without carbon restrictions would thus face the same taxes or requirements to purchase carbon allowances as domestic producers of similar products. These types of schemes are examined in further depth in a separate paper in this series, *Border Carbon Adjustment*.

Product standards and labelling are yet another way to address concerns relating to the climate impacts of production processes. An example of this type of policy application is provided by recent discussions on biofuels. For climate change, energy security and political reasons, many governments are promoting the use of biofuels. Both the EU and the U.S., for example, are adopting mandatory standards and targets for the fuel mix used in the transportation sector.

However, a wide range of actors is raising concerns about biofuels targets for environmental, social and economic reasons. Though one of the main putative reasons to support and promote biofuels is their potential to reduce GHG emissions, recent studies have shown that, in some cases, biofuels over their life-cycle lead to increases, rather than decreases in GHG emissions. Moreover, biofuels production also raises concerns about other types of environmental and social harm, such as potential impacts on land use, water resources, biodiversity and food security. It is therefore crucial that every aspect in the life-cycle of biofuels be considered, including the amount of fossil fuels consumed during the cultivation of crops, the manufacture of fertilizers, fuels processing and distribution. An assessment of the carbon balance should also take into consideration the GHG emissions resulting from land use changes as land is converted to biofuel crop production, and as production for other markets is displaced. A draft EU directive, for instance, proposes PPM-based standards on environmental sustainability (such as life-cycle GHG emissions savings of 35 per cent), and a prohibition on the use of raw materials cultivated from land with high biodiversity or high carbon stock. EU Members are also discussing other environmental, social and labour criteria. In this context, they are considering, among other things, requiring exporting countries to be parties to key international environmental and labour treaties; requiring exporters to pass "sufficient" domestic legislation in these areas; and requiring exporters to report on environmental and social standards.

Other stakeholders are also looking at the sustainability of biofuels production and processing. The *Roundtable on Sustainable Biofuels*, an international initiative bringing together farmers, companies, NGOs, experts, governments and inter-governmental agencies aims at achieving "global, multi-stakeholder consensus around the principles and criteria of sustainable biofuels production by June 2008." Similar endeavors also exist in other areas. For example, various private certification schemes have been elaborated to promote sustainable forestry practices. A widely used scheme is that of the Forest Stewardship Council, which provides certification of products, such as timber and paper from well-managed forests. Given the importance of forests for climate change because of their role as sinks, the relevance of these schemes in the climate change context is undeniable. These certification schemes are largely voluntary, but widely used.

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2 See e.g., "Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC"; U.S. S.2191 Lieberman-Warner Climate Change Security Act (2007); U.S. S.1766 Bingaman-Specter Low Carbon Economy Act (2007).

Challenges from a trade law and development perspective

In the WTO context, there has been some resistance to using PPM-based measures, especially, but not exclusively, by developing countries. Several factors explain why such measures are controversial. First, by limiting imports to products produced in a specific manner, a WTO Member may make it more difficult and expensive for exporters from other countries to sell in its market, as they will have to adapt their PPMs to the requirements of the importing country. Financial burdens and technical difficulties created by PPM-based measures can be especially hard on smaller producers and on producers in developing countries. It should be noted, however, that product standards can raise similar financial burdens, as they too may require changes in production.

Critics of trade-related PPM-based measures also claim that PPM-based import restrictions impinge upon the sovereignty of the exporting state because they aim to influence PPMs abroad. The claim regarding national sovereignty is linked to the idea that the importing state is imposing its values or ethical and cultural preferences on the exporting state. This criticism is generally countered with the argument that the importing state is not demanding the use of a particular PPM in the exporting country, but is rather regulating what enters its own territory in line with the objective of promoting more sustainable consumption and production patterns within its borders.

Moreover, the use of PPM-based measures raises questions of equity: while PPM-based measures are most frequently used by rich, importing countries, the products that are denied entrance into these important markets are frequently those of developing countries. Such measures therefore pose a particular burden on Southern exporters. This, however, may be changing. In the biofuels context, for instance, Brazil—the world's top exporter of ethanol—has stressed that Brazilian ethanol, produced from sugar cane in factories fuelled by bagasse, an agricultural residue, is efficient and provides substantial GHG reductions compared to many other biofuels. Brazil has thus expressed its desire that the method of its ethanol production be taken into account.

Finally, some countries fear that PPM-based measures are particularly vulnerable to disguised protectionism. WTO agreements and case law so far appears able to deal with this problem. The GATT general exceptions clause (Article XX), for example, while not disallowing PPM-based measures, prohibits such measures if they are merely protectionism masquerading as environmentalism.

Some PPM-based measures have been challenged under the dispute settlement mechanisms of the 1947 GATT and, later, of the WTO. The most recent PPM-related dispute is the *U.S.–Shrimp/Turtle* dispute, which involved a measure banning the importation of shrimp harvested in a way that might harm sea turtles. While the *U.S.–Shrimp/Turtle* rulings made clear that PPM-based measures affecting trade are not prohibited by WTO rules *per se*, they did not give *carte blanche* to states wishing to adopt PPM-based measures. Rather, the Appellate Body, while upholding the environmental measure, set out conditions for its application, requiring among other things cooperative efforts, flexibility, and assistance in the measure's implementation. For example the Appellate Body found that the U.S. measures established a "rigid and unbending" standard, and that it was not acceptable to "*require* other Members to adopt essentially the same comprehensive regulatory programme." It found instead that an importing Member was permitted to require regulatory programmes *comparable in effectiveness* to that of the importing Member. Transparency and due process also played an important role in *U.S.–Shrimp/Turtle*, where the Appellate Body criticized the absence of a transparent and predictable certification process. In particular, the Appellate Body contested: the partisan nature of the inquiries and certifications, the absence of formal opportunity for the country under investigation to be heard or to respond to any arguments made against it, the absence of formal written reasoned decision and of notice of denial, and the absence of procedure for review of, or appeal from, a denial of an application.

The two WTO agreements relevant to the issue of PPM-based measures relating to GHG emissions are the GATT and, possibly, the TBT Agreement. The GATT covers mandatory PPM-based measures, including standards and other internal regulations. It is unlikely that the GATT also covers voluntary measures. The TBT Agreement, on the other hand, covers mandatory and non-mandatory measures, but only appears to cover PPM-based measures that are related to the product itself. For example, the TBT Agreement clearly would cover measures that disallow products produced in a way that could make the end-product unsafe for the consumer. It is unclear, however, whether the TBT Agreement would also apply to PPM-based measures that cannot be detected in the end-product and could thus be qualified as "unrelated" to the end-product. This would be the case with measures aimed at reducing GHG emissions in the production process of a product.

One of the main legal issues that could likely arise under the GATT is the obligation not to discriminate between "like" products. This involves the question, for example, of whether a WTO Member can treat a product more favorably based on the level of GHG emissions during its production: is a ton of GHG-intensive steel "like" a ton of low-GHG steel? No case law yet exists dealing specifically with the issue of whether or not products could be considered "unlike" based on their method of production. However, one case, *EC–Asbestos*, did look at whether a product's health effects should be taken into account when determining whether or not products were "like." In that case the Appellate Body found that chrysolite asbestos fibres and certain other fibres were not 'like products' because they were physically different, partly due to the fact that chrysolite asbestos fibres are carcinogenic and also because they had different tariff classifications. More generally, the Appellate Body found that "the health risks associated with a product may be pertinent in an examination of likeness under Article III:4". This does not go as far as affirming that PPMs are relevant to likeness (especially because the decision focused heavily on the physical properties and adopted a "fundamentally" economic interpretation of likeness) but it does move away from a definition based strictly on commercial criteria, to one that takes account of other public policy objectives such as health and safety.

The second legal issue relates to GATT's general exceptions clause, which can justify environmental and health measures that are otherwise inconsistent with the GATT (for example, based on discrimination among like products). In order to justify a measure under the general exceptions clause, a Member must first show that its measure relates to the conservation of an exhaustible natural resource, or is necessary to protect human, animal, or plant life or health. Additionally, the exceptions clause provides that measures may not be applied in a manner which constitutes a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or in a manner which constitutes a disguised barrier to trade. Based on the *Shrimp/Turtle* decisions, which gave refuge to a PPM-based measure, it can be expected that climate-related PPM-based measures, too, could be justified. However, these measures would have to satisfy some of the requirements set out in *Shrimp/Turtle* including that they be enacted in good faith and in conjunction with, or after, coordination and/or cooperation efforts. The Appellate Body also indicated that measures should be applied in a sufficiently flexible manner to permit compliance, and be transparent and procedurally fair.

Ways forward

A major problem for exporters is the lack of comprehensive information on the type of standards and regulations applicable to their products and, increasingly, to the methods used in their production. This problem is particularly acute for developing country exporters, as it is often difficult for them to obtain necessary information. Transparency and notification of standards and other measures (product-related or PPM-based) are therefore essential for assisting developing countries to comply with new standards and retain or gain market access.

Both the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) and the TBT Agreement contain transparency-related obligations. However, experience indicates that the notification process has been insufficient for assisting developing countries to identify and understand SPS and TBT measures affecting their exports. Some advances have been made in this respect in the context of special and differential treatment discussions. In November 2004, Members adopted a decision on a procedure to ensure that the importing Member consults with any developing country Member that has expressed a concern regarding the potential effect of a newly proposed or modified SPS measure on its exports. Similar approaches could be adopted with respect to other types of measures.

Another problem relates to the fact that, even where environmental and health measures are transparent and developing countries have access to all necessary information, countries may still face problems adapting their exports to new requirements. WTO Members should therefore provide developing countries (especially least developed countries) with the necessary financial and technical assistance to enable them to effectively respond to the introduction of climate-related standards and measures (both product related or PPM-based). In large part this is in line with the obligations Members have towards developing country Members under Article 11 of the TBT Agreement. It is also worth considering whether this type of capacity assistance might be provided under the auspices of the UNFCCC.

It would be useful to support efforts to promote international standards (mandatory or voluntary; private or public) with the involvement of a wide array of stakeholders in order to ensure that the standards do not unintentionally discriminate against certain producers. Assisting the participation of developing countries or their producers in elaborating those standards will be essential. In line with WTO case law and as with any domestic standard, international standards should be flexible, and should allow different approaches to achieve the same goal.

References and further reading

Energy performance standards and labelling

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