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Carbon Labelling: Moral, Economic and Legal Implications in a World Trade Environment

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ABSTRACT

Carbon labelling is a noble concept aimed at reducing carbon emissions through more efficient methods of manufacture and more responsible consumer habits. Unfortunately no widely accepted system of labelling exists, and creating one raises a number of questions on the global political and economic levels.

KEY WORDS

CARBON FOOTPRINT, CO_2 EMISSIONS, LABELLING, WTO

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INTRODUCTION: CONCEPT AND QUESTIONS POSED BY CARBON LABELING

Carbon labelling is the latest in an ever-growing trend towards buzz concepts within the environmentalist community. The concept first came into being in the United Kingdom in 2007 as an act by the Carbon Trust, in association with the British Standards Institute. Simply stated, carbon labelling strives to emblazon a product with a visible representation of the quantity of carbon emissions generated by its creation and in delivering it to consumers. Climate change is due in large part to emissions of carbon dioxide (CO_2) into the atmosphere and cannot be halted, much less reversed, without the control and reduction of these emissions. With current CO_2 levels reportedly at their highest level in 450,000 years, and the associated rise in global temperature creating adverse effects on delicate ecosystems and wreaking havoc on agricultural production worldwide, it is clearly imperative to do something to restrict the causes of these emissions.(Howse) Unfortunately, as no universally accepted measure of the variables involved in determining the value of carbon emissions associated with a specific finished consumer product is currently in place, a number of questions quickly arise from the use of this system.

The primary focus of carbon labelling as presented to the consumer is frequently the issue of air miles – the process of freighting products by airplane is extremely carbon intensive, more so than any other method of transportation. However, challengers have frequently stated that other factors should be given proper weight in identifying a product's true carbon footprint – including manufacturing standards, storage practices and even the tiniest details of the stores that sell the products, right down to their electricity consumption and the number of miles customers must drive to purchase the product. Economists and scientists continuously offer a myriad views on the correct way to determine more accurate and useful life-cycle carbon values and apply them to products in a way that the average consumer can understand and use in making their environmentally responsible purchasing decisions.

Also controversial is the way in which carbon labelling is used within the global economy – is it merely intended to raise environmental consciousness, or are there ulterior motives involved, namely, to inhibit international trade and further the interests of the countries imposing the labels? Furthermore, what is the most socially responsible method of determining exact carbon emission values, and what is the potential for generating a standardized system of carbon

labelling without violating international trade laws? Politically, will the countries participating in such labelling schemes see adverse changes in the way they interact? These are all questions this study will strive to examine from a scientific and legal perspective.

A GREEN POINT OF VIEW: THE CONSUMER PERSPECTIVE

The “carbon footprint” is a term used to describe an estimate of the amount of harmful environmental emissions created by a person, organization or process. At present there is no precise method to measure or determine an exact value for this figure, though numerous approaches have been proposed to provide rough estimates for personal use, ranging from basic online calculators to sophisticated life-cycle analysis or input–output-based methods and tools. Scientifically there is no consensus on how to measure or quantify a carbon footprint. The spectrum of definitions of what factors contribute to generating your carbon footprint value ranges from direct CO2 emissions to other full life-cycle greenhouse gas emissions such as methane and N2O. Within the discussion of which gases to include, not even the units used to measure these quantities is widely agreed upon. (Wiedman)

For the average consumer, the carbon footprint is determined by everyday activities – everything from washing a load of laundry, driving to work or school, to the products one uses or consumes around the house. While academia can argue over the exact phrasing behind determining a carbon footprint, the average consumer needs a much simpler definition. In many ways, current applications of carbon labelling meet this need – they provide shoppers with a simple, easily visible carbon value displayed on the items they buy, allowing them to make a decision on which product meets their needs and standards.

Carbon labelling programs are currently in use in a number of markets, but have seen particular growth in the UK, Sweden and France. In January 2007, Tesco, one of the UK’s largest supermarket chains, announced a plan to put a carbon label on 70,000 of its products. Similarly, Marks & Spencer, another high-end British grocery chain has started labelling many of its imported products with an airplane to indicate that it arrived via air freight, the most carbon-intensive form of transport. (Appleton)

Since its introduction to the UK, a variety of high-profile companies worldwide have instituted both carbon labelling and carbon disclosure policies on their products. Among them are mass retailers such as Wal-Mart and Home Depot, and manufacturers including General Motors and Dell. (Bellman) None of these companies use any standardized method of reporting carbon values – some, like Home Depot, use a simple estimate provided by their suppliers – while others, like Wal-Mart, use a more advanced method of life-cycle analysis that takes into account "embodied carbon", which refers to carbon dioxide emitted at all stages of a good's manufacturing process, from the mining of raw materials through the distribution process, to the final product provided to the consumer.(Kejun) The attempts at carbon disclosure made by these companies are voluntary initiatives to provide consumers with the means to make ecologically informed buying decisions.

The largest effect of these new labelling initiatives has been to spur local food initiatives, encouraging consumers to buy only goods that were produced within their communities – giving rise to the term "localvore" for those who only consume locally produced goods. The purpose behind these movements is to limit the distance travelled by products, thereby reducing the carbon generated by mass transport by air, sea and land freight. Such groups typically include farmers' cooperatives which have seen strong growth throughout Europe and North America. Within the United States, the numbers of farmers markets have expanded from an estimated 1,755 in 1995 to 4,385 in 2006, according to the United States Department of Agriculture (USDA)'s Agricultural Marketing Service. Many argue that restricting consumption to local goods is healthier, in addition to being more environmentally aware, as such goods require far less chemical preservatives to maintain freshness. Such movements also encourage consumption of fruits and vegetables only when in season, as those products not in season must be grown in warmer climates and imported. These movements have become a large sticking point for controversy however – when it comes to local versus global foods, social, economic and environmental issues abound.

LABELING STANDARDS AND FLAWS

The first of many questions posed on the application of carbon labelling is the significance of "food miles", which is the primary form of labelling currently in use in today's supermarkets. Food miles labels rely strictly on the distance travelled by a product to determine its carbon value

– the further a food item travels, the more it contributes to climate change through negative emissions. Today, food travels an average of 1,500 to 2,000 miles before reaching the consumer – 25% farther than in 1980. Some environmentalists consider this growth in overseas food trade to be responsible to a large extent for the increase in emissions of environmental pollutants.

Unfortunately, this view of food miles immediately raises questions – the first regarding transportation methods used to deliver these products to market. Air freight is unarguably the most carbon-intensive method of transport, producing nearly three times more emissions than ground transport by large truck. However, sea transport, the method used to transport many types of agricultural products, is actually believed to be more efficient than trucking – which would in many cases give products produced abroad and transported by ship a carbon advantage over nationally produced goods transported by truck. Based largely on these discrepancies, studies of total carbon footprint involved in food production within the United States have largely found food miles to be an insignificant part of the equation, giving far higher importance to emissions resulting from the methods of production used, including pesticides and fertilizers, and energy sources consumed by farm and processing equipment.

Studies have resulted in a number of carbon emission assessment methods that examine the entire production process associated with a product, rather than merely how far it has travelled. These key techniques include life-cycle analysis, carbon footprint identification and hybrid life-cycle analysis.

Life-cycle analysis: Production-based assessment which includes systematic evaluation of all environmental effects involved in creation of a product or service system through all stages of its life-cycle, including acquisition and refining of raw materials, manufacture, transport, distribution, use, maintenance, recycling and final end-life disposal.

Ecological footprint analysis: Judges consumption of resources by estimating the area of productive land and water systems in relation to the quantity of these resources available to a given population.

Hybrid life-cycle analysis: Input–output study of individual products which includes on-site study of production facilities in order to determine embodied carbon values.

Until a method of analysing the amount of carbon emissions created through the entire life-cycle of a product is more widely accepted and applied, it will remain difficult to make meaningful comparisons between products produced locally and abroad. Other challenges are the cost and time requirements for analysis of embodied emissions, which can be prohibitive.(Kejun) It is largely this fact that results in food miles being the carbon label of

choice, as the calculation of distance travelled by a product is by far the simplest measure available to many retailers.

WTO PERSPECTIVE ON PRODUCT LABELING

Established in January of 1995, the World Trade Organization (WTO) deals with and supervises the rules of trade on an international and near-global level. It is responsible for negotiating and ratifying new trade agreements between host nations and policing adherence to all agreements ratified by the Members. Interested primarily in maintaining fair and equitable trade between its Members, it remains to be seen what the organization's stand on carbon labelling will be. As stated in their "Principles of the Trading System", the WTO states five primary principles for governing the legality of international trade policies:

1) Non-Discrimination: WTO Members must apply the same conditions to trade with all other WTO Members and may not grant special favour to or impose special restrictions on trade with any other Member. All locally-produced goods should be treated equally to imported goods.
2) Reciprocity: Nations may negotiate for better access to foreign markets, but must award equal access to their own markets in return.
3) Binding and Enforceable Commitments: Tariff commitments made in multilateral negotiations are binding and can only be changed through further negotiation with its trading partners. Changing of agreements could result in one side having to compensate the other for loss of trade, and any disputes are handled directly by the WTO.
4) Transparency: All Members must openly publish their trade regulations, allow other Members to review any administrative decisions made, respond to other Members' requests for information and notify the WTO immediately of any changes made to trade policies.
5) Safety Valves: Member governments may occasionally restrict trade under very specific circumstances. Provisions for this include allowing use of trade for non-economic purposes, ensuring "fair competition" and permitting intervention in trade for economic purposes.

In the context of carbon labelling, the term non-product-related processes and production methods (NPR-PPMs) refers to carbon emissions associated with a product's production or transport that are indiscernible in the final product. For example, the amount of carbon that was produced in generating the electricity used to manufacture the product, or to transport it by ship or plane to the country of sale (i.e. "food miles"). The applicability of the Agreement on Technical Barriers to Trade (TBT Agreement) to NPR-PPMs is one of the principal uncertainties regarding the application of the TBT Agreement to carbon standards and labelling schemes and the primary question which the WTO will ultimately have to answer as labelling programs become more prevalent in today's markets.

The TBT Agreement is central to the WTO's stand on the legal viability of carbon labelling and how it relates to international trade. Consisting of 15 primary articles and 3 supplementary annexes, the TBT Agreement is the primary legal reference that must be examined in this case. Pursuant to the Agreement, WTO Members are responsible for monitoring and regulating manufacturing standards for all products produced and sold within their territory. Optionally, Members may also choose to regulate the methods of transportation used for products within their territory and their methods of use and disposal. As all of these regulations apply to goods produced and sold within the Member's own territory, the question arises as to how the Agreement should apply to goods produced outside their borders. Most significantly, how can Members track NPR-PPMs on products produced outside their territory, particularly if these carbon values are not detectable in the final commercial product. In this context can a country legally place a carbon label on a product to reflect harmful emissions produced during the product's manufacture in another country?

This underlying question is perhaps the most important legal issue facing carbon labelling, as the vast majority of carbon emissions related to a product are associated with its production and transportation to the point of sale. In the case of world-wide international imports, these transportation emissions can be particularly significant. Whether or not the TBT Agreement applies to NPR-PPMs, however, is a controversial issue, due to the frequently ambiguous wording of the Agreement itself. The terms 'technical regulation' and 'standard' as used in Annex 1 of the Agreement demonstrate this ambiguity:

Annex 1(1) of the TBT Agreement defines a technical regulation as a:

> *Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method*.

Annex 1(2) of the TBT Agreement defines a standard as a:

> *Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.*

Both Agreement clauses contain the phrase 'related processes and production methods' in their first sentence, but fail to include the term 'related' in the second sentence, referring specifically to the 'labelling' of a product, process or production method. The absence of the term 'related' in the second sentence leaves room to argue that labelling requirements need not be 'product-related'.(Appleton) This loophole apparently creates room for carbon labelling to include objective reference to NPR-PPMs on imports as well as domestic products.

Despite this apparent loophole, an explanatory note reflecting the most widely accepted interpretation of WTO Members is included with Annex 1 and reads as follows:

> *The terms as defined in ISO/IEC Guide 2 cover products, processes and services. This Agreement deals only with technical regulations, standards and conformity assessment procedures related to products or processes and production methods. Standards as defined by ISO/IEC Guide 2 may be mandatory or voluntary. For the purpose of this Agreement standards are defined as voluntary and technical regulations as mandatory documents. Standards prepared by the international standardization community are based on consensus. This Agreement covers also documents that are not based on consensus. (*TBT Agreement*)*

The salient point of this note is the line specifying "technical regulations, standards and conformity assessment procedures related to products or processes and production methods" – while this may superficially appear to prohibit NPR-PPMs from being included on product labels, it also raises the question of exactly what meaning lies behind the word "related". Does "related" in this context indicate only carbon emissions detectable in the final product (i.e. product-related), or can it be given a broader interpretation to include any emissions associated with the process or production method involved in its creation? To date, no legal cases have been presented to the WTO's dispute panel addressing these questions.

Ultimately, how important is the issue of including NPR-PPMs on product labels? Carbon labels are intended to allow consumers to know the environmental impact of a product, and to factor this into their purchasing decisions on a daily basis, from large purchases such as cars to something as simple as a loaf of bread. 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 producing the product in the first place. This is a very important factor in the economic consideration of a product's carbon efficiency. In the absence of carbon 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. From an environmentalist standpoint, these problems are clear and significant – but from a legal and commercial perspective one is more concerned with the question of whether or not such labels could constitute a means of unfair trade discrimination, a practice unwaveringly condemned by the WTO.

In their current incarnation, carbon labelling systems are largely internal affairs – single government or corporate initiatives to become more environmentally conscious and encourage their consumer population to be conservative in energy usage and resource consumption, thus reducing the harmful impact of carbon emissions on the environment. As their name suggests, "information labels" provide consumers with detailed information about the energy consumption and related product performance levels and are intended to provide enough of such information to allow consumers to make more ecologically sound and socially aware product choices. These

labels can be voluntary or mandatory within any market and they can provide simple, straightforward information or be of a more “comparative” type, providing consumers with clearly established benchmarks by which to gauge the product’s environmental impact. In the case of simple labels, they frequently report how much energy a product uses. Comparative labels also compare that amount to the energy used by competing products providing an equivalent service level. Experience has shown that simple information labels have significantly less impact on consumer decisions than more detailed comparative labels, and therefore comparative labelling is a much more useful system of carbon labelling. Given their importance in stimulating highly cost-effective energy and emissions savings, the prevalence of usage of such labels is likely to continue to rise as governments worldwide continue to strive to step-up environmentally conscious efforts. 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.

The key principle of trade law concerning the WTO on the subject of carbon labelling is non-discrimination: goods imported from foreign producers must get no worse treatment than like goods from domestic producers, and there must be no discrimination between similar goods produced in one foreign country and those from any other foreign country. This raises the question of whether or not the application of carbon labels to products provides them with any commercial advantage or disadvantage in the marketplace – if imported goods are labelled, will they sell less than domestic goods? If domestic goods are labelled, will they sell more than similar imported goods? If one country exports its goods with carbon labels already applied to them, will they sell better in a foreign country than another country’s exports to that market, without labels? With respect to discrimination on the basis of embodied carbon, the million-dollar question is how to define “like” goods. Is a pound of bananas grown using environmentally conscious farming methods “like” a pound of bananas grown under more polluting conditions? If so, then tariffs based on embodied carbon may violate the principle of non-discrimination as set forth by the WTO.(Kejun)

Recent studies analyzing imports from African countries to European markets show that despite having more “food miles”, ultimately they have a lower carbon impact than like products

produced in European markets. World Flowers, an English importer of cut flowers for decorative bouquets, participated in such a study, which concluded that the global warming potential over the next twenty years would be 6.4 times higher from roses grown in Dutch greenhouses than from roses grown on the equator in Kenya and flown to the United Kingdom. (Appleton) The study based these findings on the fact that naturally grown flowers, such as those imported from Africa, resulted in far fewer carbon emissions than those grown in the artificial surroundings required to produce similar flowers in the colder European climate of the Netherlands, given the significantly higher energy demands involved in artificial cultivation: heating, humidity control, artificial fertilizers and other carbon-heavy factors.

A second study, done on naturally field-grown green beans, showed that those produced in the African country of Kenya and imported for sale in English markets had an overall higher carbon footprint than similar green beans grown locally in the UK due to the high environmental impact of air freight emissions. However, such green beans could only be produced within the UK during the warm summer season, and year-round production would require the use of carbon-intensive heated and lit greenhouses, ultimately producing a similar situation to that of the roses – the African imports would gain the carbon advantage due to the benefit of natural growing methods outweighing the greater cost of importing them by air. (Bellman)

Given the number of variables involved in determining whether domestic or imported products have the advantage when it comes to production, the question turns back to whether or not carbon labelling has any effect on consumer buying tendencies. A study conducted by the International Trade Centre in 2007 determined that only one-third of shoppers were aware of the concept of food mile labelling, and statistics gathered by supermarket chains implementing food mile labelling systems show that consumer purchasing habits have changed little in response to the labels. A second study conducted in 2007 by the United Kingdom Energy Research Centre demonstrates that shoppers are more likely to be confused or overwhelmed by the information contained on carbon and energy labels than they are to understand them and implement the knowledge in their shopping habits.

Though these issues could likely be corrected with public information campaigns on the subject of carbon and energy labelling, the question remains of whether or not applying such labels has any effect on imports vs. domestic sales within the current market. A WTO panel faced with a

technical regulation or standard applicable to carbon emissions is likely to turn first to the TBT Agreement. The TBT Agreement differentiates between technical regulations (mandatory measures) and standards (voluntary measures) and sets forth rules applicable to both which would apply to the subject of carbon labelling.(Appleton) Mandatory carbon labelling would therefore have to be applied equally to imports and domestic goods, and must satisfy non-discrimination laws by proving that such labelling of imports does not put them at an unfair market disadvantage compared to domestic products. The cases examined thus far, however, are voluntary labelling measures – giving rise to the question of whether or not those taking part: Marks & Spencer, Tesco, Wal-Mart, etc; can be considered to be standardizing bodies under the letter of the agreement. The terms ‘standardizing bodies’ and ‘standardization body’ appear more than 55 times in the TBT Agreement, but are never precisely defined, leaving it open to debate whether or not these labelling practices apply until a formal case is presented to the governing panel.

Under WTO law, countries retain the sovereign right to restrict the import of products they believe fail to meet safety standards and regulations. Whether or not NPR-PPMs can be factored into this decision is the underlying question.(Deere) In 2001 the Appellate Body witnessed a case concerning insulation products containing asbestos, and whether or not such products could be legally distinguished from similar products not containing the harmful carcinogen – the Appellate Body found that the “characteristics” of a product include any objectively definable features, qualities, attributes or distinguishing marks of a product, and that such characteristics might relate to or include the product’s composition and any other features intrinsic in the product itself.(Measures Affecting Asbestos and Asbestos-Containing Products, 2001) Based on this case, one could potentially raise an argument that PPM carbon emissions could be considered an environmental hazard and therefore fall within the WTO’s parameters for imposing restrictions on imports of products with large carbon footprints. The question remains however, whether or not NPR-PPMs, not immediately recognizable in the final product, could also fall within the scope of the decision.

The WTO has presided over a case differentiating industrial production methods: the US-Superfund case of 1986 determined that imported products produced with harmful chemicals were “like” similar American products not produced with the chemicals – and that while the

United States could not limit the import of these products (such a move would be considered discriminatory), they could opt to impose a tax on the imports due to the increased burden of disposing of and cleaning up after the residual effects of the harmful imported products. If similar findings were extended to the subject of carbon emissions, it is plausible that the WTO Appellate Body may find that a carbon tax distinguishing between high-carbon and low-carbon products, such as steel imports, could be extended to include the presumption that high- and low-carbon products are not "like" products, and could therefore be distinguished from one another and granted different treatment in international trade matters without violating non-discriminatory obligations.(Pauwelyn)

Regardless of the path chosen for adopting an internationally viable stand on carbon emissions attributed to products, some determination must be made of how "like" products can be identified in order to allow single-nation emissions cuts to succeed. Continuing the preceding example, if the United States were not permitted to tax imported Chinese steel (produced with carbon-intensive coal processing techniques), then the imported steel would possess a drastically unfair competitive advantage over domestically produced American steel (created with more expensive carbon limiting regulations in place requiring that the coal be processed using natural gas). Thus it is only by imposing import taxes and tariffs that America's internal market can maintain balance: because of this quandary, it seems impossible that future claims could be made that these products are not "like", as they clearly compete directly with one another in the marketplace. However, for the Appellate Body to find that a competitiveness provision is in violation of discriminatory clauses, it must be demonstrated that the importing country is levying restrictions on all imported like products which affect them more heavily than all like domestic products, thus creating a sheltered market for domestic production. In the case of steel, this would require that all US produced steel be inherently low-carbon, while all imported steel (regardless of origin) be predominantly high-carbon. The Appellate Body has state that it is willing to accept "detrimental effect on a given imported product" as long as such action can be "explained by factors or circumstances unrelated to the foreign origin of the product", i.e. environmental concerns could be considered a valid reason for imposing import taxes, so long as it can be clearly demonstrated that the taxes or regulations are associated with protecting the environment, not with hampering free trade.

Unfortunately, this once again gives rise to the question of discrimination – if European steel manufacturers adopt carbon-saving production practices, while Chinese producers do not, is it legally acceptable to tax the Chinese product while allowing the steel produced in Europe to enter the American market tax-free. This would clearly give one country a competitive advantage in a foreign market that is not available to another member country. Similarly, taxing all imports across the board, regardless of the standards applied to their production would likewise be subject to challenge. European makers would then be at a competitive disadvantage compared to Chinese producers, as they are effectively paying double for their carbon expenditure – once to clean it up, and again in the tax intended to compensate for high emissions. A possible method of circumventing this double taxation would be to grant countries meeting emissions standards the ability to claim rebates. Their goods would still be taxed on entry into the United States at the same rate applied to all like imports, but they would be reimbursed.(Pauwelyn) As long as such rebates were made equally available to all importers, this would seem to circumvent the question of preferential treatment. However, if US border taxation on imports is instituted as a regulation, "rebating" a regulation upon export is not a legally viable option (under the Agreement on Subsidies and Countervailing Measures it could even be considered a prohibited export subsidy). In that case, the argument that European imports are discriminated against becomes stronger because they are included among those taxed by the US based on harmful carbon emissions to the same extent as Chinese imports, despite being responsible for lower emissions due to higher production regulation standards. In this situation, discrimination could be argued to exist not only when like products are treated differently (if Chinese steel were taxed due to high emissions, while European steel was permitted to enter the market tax-free), but also when different products are treated alike (when Chinese steel with no carbon emission cut regulations in place is taxed at the same level as European steel with emissions cuts). Yet, for European producers to convince the WTO that their steel qualifies as different or "unlike" based on whether it was produced with or without emission cuts in place would be hard, given the WTO's competitiveness test for likeness explained earlier.(Pauwelyn)

While no WTO legal documentation currently exists on the subject of environmental concerns, the organization has proven to be somewhat more flexible in recent years in its consideration of "green" trading policies. The General Agreement on Tariffs and Trade (GATT) does contain provision for trade to be restricted in cases "relating to the conservation of exhaustible natural

resources if such measures are made effective in conjunction with restrictions on domestic production or consumption". In order for this exception to be satisfied, three conditions must be met.

Firstly, can the planet's atmosphere, the primary victim of carbon emissions, be considered an "exhaustible natural resource"? Previous cases have determined plant and animal life to be such resources, and given that environmental degeneration as a result of harmful emissions is inextricably linked to the wellbeing of all plants and animals, there is therefore precedence for the WTO to consider the atmosphere itself to be a natural resource. The question then turns to whether or not emissions created in a foreign country have an effect on the importing country's atmosphere. Since it is inevitable that carbon emissions will cross territorial borders, the world's atmosphere is a global entity.

Secondly, does climate legislation directly relate to the conservation of the planet's atmosphere? It must be found that there is a substantial link between established climate legislation and results in terms of conserving the planet's atmosphere and related climate. Unless there are inconsistencies inherent in the construction of such legislation, this criterion should generally be met.

Lastly, is climate legislation on imports consistent with restrictions made on domestic products? As long as the legislation in place imposes similar requirements on domestic production, this requirement will be met. Only a requirement of "even-handedness" is made in the case of imposing taxes and limitations on imports. The Appellate Body states that there is "no textual basis for requiring identical treatment of domestic and imported products" indicating that some details found in legislation may legally differentiate between imports and domestic goods, as long as the ultimate result is equal opportunity within the marketplace.

As long as these three conditions can be met, while satisfying the GATT provision that "measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade", a strong case for the viability of carbon labelling could be presented to the Appellate Body. In a similar motion, the UN Framework Convention on Climate Change established that "measures taken to combat climate change, including unilateral ones,

should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade." Inherent in meeting both of these requirements is that the underlying purpose of legislation be to promote and enforce environmental awareness and conservation, rather than an attempt to impose thinly veiled protectionist trade policies.

Legal precedence for the application of environmental labelling, which could be used as a basis for a case made on behalf of carbon labelling, could include reference to the case appealed to the GATT dispute panel in 1991, designated Tuna-Dolphin. The case involved a Mexican objection to American labelling of canned tuna as "dolphin safe" or "dolphin free" if it met with fishing standards intended to reduce the number of accidental dolphin deaths due to careless net usage and fishing practices. As a result of the US Congress passing the Marine Mammal Protection Act in 1972, a national campaign began to reduce the number of dolphins accidentally killed to "levels approaching zero" by restricting US tuna fisheries to dolphin-safe fishing techniques. Additionally the Intermediary Nation Provision required that countries exporting tuna to the United States must prove that the fish were harvested in such a way as to meet with dolphin-safe fishing requirements, or else risk having an embargo placed against their tuna imports within 90 days. To further enforce this policy, the Dolphin Protection Consumer Information Act designated that producers and importers of tuna could only include "dolphin safe" labels on their products if the tuna were proven to have been harvested in a manner that did not harm or endanger dolphins.

The policy came to be challenged before the WTO review board when the United States placed a ban on imports of tuna from Mexico, because the country had not imposed sufficient measures to reduce the number of Eastern Pacific Tropical dolphins killed by their tuna fishing operations. Mexico subsequently protested against the ban, and a similar suit was filed shortly thereafter by France, whose imports were also banned for the same reason. As a result of the import ban, the value of Mexican exports of tuna fell from US$13 million in 1989 to US$3.2 million in 1990. The panel ultimately found in favour of Mexico on the issue of the bans, stating that they were implemented in a discriminatory manner – however, the same panel determined that the voluntary US scheme at issue did not prevent tuna products from being sold freely with or without the 'dolphin-safe' label, nor did the scheme establish requirements that had to be met to

obtain an advantage from the US Government. Any advantage that occurred was due to consumer choice. (Appleton)

From this case one may conclude that carbon labelling could theoretically find acceptance within the WTO provided the labelling plans are instituted on a voluntary basis and do not outright prohibit products coming into the market, regardless of the carbon emissions related to their production. In a similar case, US-Shrimp, which involved shrimp fishing methods using nets safe for sea turtles, the WTO found that "WTO Members are free to adopt their own policies aimed at protecting the environment as long as, in so doing, they fulfil their obligations and respect the rights of other Members under the *WTO Agreement"*. (US-Shrimp, 1998) Implicit in this decision is that global ecological issues require cooperative solutions – if environmentally friendly production and trade practices are to be adopted, this will necessitate collaboration between all Members and require the WTO Members to commit to taking unilateral measures against any Members that choose not to cooperate. Such unilateral action, however, must take into account the needs and capabilities of developing countries, many of which adamantly oppose the imposition of trade restrictions based on carbon emissions for a number of reasons.

LEGAL IMPACT ON DEVELOPING ECONOMIES

A point worthy of discussion concerning the practical application of a unilateral policy of eco-friendly commerce is the potential impact of carbon labelling on developing countries. Poverty in developing countries poses an important and direct threat to the environment, including climate change, through unrestrained carbon emissions. The question then, is whether or not it is more environmentally stabilizing to strengthen carbon regulations, at a significant potential cost to the developing nations, or to allow them more leeway in order to maintain a competitive edge, thus strengthening their economies through trade and allowing for future development of more ecologically sound production methods. Evidence garnered from studies of developing economies shows that international trade promotes economic growth. Thus trade also has an indirect effect on the environment – more healthy and thriving economies can afford to modernize production methods with the aim of reducing carbon emissions. Given the environmental Kuznets curve, at low levels of income this effect increases pollution, but at high levels reduces it. (Frankel)

If standards for carbon emissions were formally adopted within the WTO, the cost of complying with standards would likely be borne by the producers in the developing member country themselves, with no guarantee of the benefits they will reap in return. If the standards are a requirement for producers wishing to export to a certain market, and if the costs are too high, they can be excluded from the market altogether, which could jeopardize their livelihoods. This conclusion will inevitably violate the organization's non-discriminatory policy. But, is the concept of embodied carbon compatible with the principles of the multilateral system of trade? Specifically, can discrimination based on embodied carbon be accommodated for by expanding upon existing trade law? Given the profusion of carbon labelling programs already in place and those bound to spring up in the coming years, both private and governmental, this question is vital.(Kejun)

Preferential treatment for poor and developing countries is outlined in Article 12 of the TBT Agreement itself, which specifies:

> *12.1) Members shall provide differential and more favourable treatment to developing country members to this agreement.*
>
> *12.2) Members shall give particular attention to and take into account the special development, financial and trade needs of developing country Members.*
>
> *12.3) Members shall, in the preparation and application of technical regulations, standards and conformity assessment procedures, take account of the special development, financial and trade needs of developing country members, with a view to ensuring that such technical regulations, standards and conformity assessment procedures do not create unnecessary obstacles to exports from developing country Members.*

Within the context of WTO Members, there has been much resistance to NPR-PPM-based carbon measures by developing countries for a number of reasons. Firstly, wealthier WTO nations may make it more difficult and expensive for poor nations to sell in their markets if the poorer countries are required to make expensive adaptations of their production and monitoring methods in order to meet the carbon emission requirements of their potential market. Conforming to such standards could potentially be cost-prohibitive and prevent poor nations from selling goods in the market of the export country concerned. Even if production standards

do not require alteration, poor nations will still see increased cost in their international trade, as they will be forced to undergo extensive monitoring and analysis of production processes in order to continuously verify that they are meeting the requirements of carbon emission restrictions.

Statistically, however, developing countries typically have the edge in low carbon emissions when considering raw agricultural production. Fertilizers tend to be used much less intensively in countries with lower incomes, which rely far more on natural growing conditions. Similarly, production in low income countries is less mechanized with much less use of tractors and other processing equipment that uses fossil fuels. In low wage countries production is typically labour-intensive and they rely considerably less on machinery than high income countries do, which also reduces carbon expended in agricultural production. Livestock rather than machines are often used for a number of agricultural tasks, eliminating a sizable amount of production-related carbon emissions.(Brenton) However, this advantage of naturally low carbon emissions may be outweighed by the cost of measuring them – scientific monitoring of production is a cost many developing countries cannot bear without assistance.

Assistance on technical matters is also included within the parameters of the TBT Agreement, Article 11:

> *11.2) Members shall, if requested, advise other Members, especially the developing country Members, and shall grant them technical assistance on mutually agreed terms and conditions regarding the establishment of national standardizing bodies, and participation in the international standardizing bodies, and shall encourage their national standardizing bodies to do likewise.*
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> *11.4) Members shall, if requested, take such reasonable measures as may be available to them to arrange for advice to be given to other Members, especially the developing country Members, and shall grant them technical assistance on mutually agreed terms and conditions regarding the establishment of bodies for the assessment of conformity with standards adopted within the territory of the requesting Member.*
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> *11.6) Members which are participants of international or regional systems for conformity assessment shall, if requested, advise other Members, especially developing country Members, and shall grant them technical assistance on mutually agreed terms*

and conditions regarding the establishment of the institutions and legal framework which enable them to fulfil the obligations of membership or participation in such systems.

Based on Article 11, Members of the WTO must be prepared to deal with the issues facing developing countries in the process of adapting their export products to meet regulatory requirements. In some cases, significant financial and technical support may be required to enable poor nations to effectively respond to and satisfy climate-related standards.

In examining the establishment of product standards that could potentially lead to differentiation between domestic and imported goods, one must also analyze the economic and political intentions of stronger Members wishing to impose the potential for import bans on their weaker counterparts. The primary purpose of the WTO is to prevent and eliminate protectionism by promoting free trade policies and enforcing international economic treaties, and as discussed previously, numerous clauses exist in WTO policy to ensure the protection of economically developing countries. Many among those opposed to carbon labelling cite that the practice is little more than a form of "green protectionism" – policies intended to use environmental protection as an excuse for inhibiting the importation of goods and to boost domestic industry by allowing domestic companies to function in a protected market.

Some forms of traditional protectionism are allowed by WTO policy under certain extreme conditions. Members may impose protective tariffs (taxes on imported goods), import quotas limiting the quantity of imported goods (thereby stabilizing market prices), and other administrative barriers to temporarily restrict or prohibit trade. Such measures are typically short term, and the Member must satisfy established requirements. Some opponents of the WTO claim that these restrictions on protectionist policies are actually hampering global economic development by preventing Members from freely taking action to strengthen their own economic situations – by allowing nations free rein in their international trade policy, capital and resources will naturally flow to wherever costs are lowest, thereby benefiting poor nations. Conversely, free trade proponents denounce protectionism on the grounds that it is shaped more by ideology than statistics – based on comparative advantage, free trade benefits Members by creating jobs and allowing countries to specialize in certain sectors of the market, thereby achieving the most efficient use of their available resources. Most leading economists argue that free trade benefits

developing countries by promoting growth in manufacturing and creating competition amongst producers, and elevating wages and living conditions.

Furthermore, proponents of free trade argue that it encourages economic interdependence between nations, stabilizing the global political environment and reducing the likelihood of war. Many indicate that the Smoot-Hawley Tariff Act of 1930, a policy that raised import taxes on more than twenty thousand classes of goods, was largely responsible for deepening the Great Depression experienced in America during that decade and ultimately set the stage for the Second World War by throwing off the balance of international trade. (Cosbey) Countries are at greater advantage in maintaining the status quo of international trade than in risking its disruption through costly war expenditures. Additionally, free trade encourages cultural exchanges and a mutually beneficial exchange of technology. Despite the positive effects of free trade, its benefit to developing nations is something of a gray area – in many ways, unfettered trade favours wealthier nations, which typically possess the advantage in available capital and intellectual property rights.

Challengers of the concept of green protectionism consider that countries imposing carbon emission regulations are impinging on the sovereignty of countries wishing to import goods into their markets, as they are attempting to influence industrial policies of a country other than their own. This places the importing state, typically a richer and stronger entity, in the position of imposing its own values, ethics or cultural preferences on the exporting nation.(Waide) Proponents of carbon labelling counter, however, that the importing country is merely seeking to regulate trade within its own borders with the intention of promoting more sustainable product consumption, and that no undue pressure on its trade partners is intended. The WTO's GATT agreement is clear on this matter – PPM-based trade policies are permissible, but not if they are merely protectionist policies in the guise of environmentalism. With national economies worldwide beginning to feel the squeeze of recession, the stage seems more set than ever for protectionist barriers to arise. While broad-ranging tariffs are difficult to impose and justify, many wealthier nations manage to slip under the radar by imposing targeted taxes on imports from countries judged to possess an unfair advantage over their domestic competitors due to lower environmental standards and poor labour conditions. A study by the University of California's Merage School of Business concluded in 2006 that China's Baosteel corporation

spends a mere 0.3 percent of its gross revenue on compliance with environmental regulation, while its American competitor US Steel spends nearly 3 percent.(Shanmugam)

Unfortunately, the global desire for higher environmental standards including carbon labelling seems to be running ahead of methodological considerations and collaborative efforts. Little say in the matter is given to low income countries, and the richer WTO Members tend to dominate any policy discussions. The ever-evolving standards of carbon emission measurement leave the exact costs of complying with emission standards a complete mystery to most, making it nearly impossible for international strategies of carbon reduction to be adopted. Without question, it is imperative that simple, cost-effective methodologies for gauging harmful carbon emissions be standardized before any labelling scheme can be applied internationally. The interests of developing countries must be considered in the design of such a program, allowing them the opportunity to use their low-emission production advantages while measuring and verifying emissions in a cost-effective manner. WTO Members would also be expected to provide developing nations with financial and technical assistance in order to allow them to introduce environmentally protective standards and policies as outlined, in any international policy that is introduced.

The Doha Declaration, a result of the WTO Ministerial Conference of 2001, is the first attempt at developing a unilateral motion with the intention of protecting and promoting public health. While the primary focus of the declaration is the availability of medicines and medical technology, and the specification of where such resources fall under intellectual property laws, and how the international community can most responsibly make such human advancements available to everyone in need, it could be considered as an underlying framework for opening the environmentalist concern of carbon emissions to international analysis. Key traits of the agreement include a mutual affirmation by Members to seek sustainable development methods of adapting current trading systems to support and advance trade and environmental concerns. Included in the drafted preamble to the declaration is the uplifting statement: “We strongly reaffirm our commitment to the objective of sustainable development…we are convinced that the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive.” Environmental concerns already addressed by the

initiative include the elimination of environmentally hazardous fishing methods and efforts to unite WTO and international environmental law by finding commonalities of purpose. Should the initiative succeed, this will inevitably include discussions on the impact of environmental standards and restrictions on market access, and the effects of environmental labelling requirements both on its goals of limiting harmful emissions and on the international economies. Included in these considerations must be the issue of due assistance granted to developing countries to ensure they are not only capable of complying with any standards established, but also that doing so does not place undue strain on their economies or disadvantage them. Given the diverse trade community represented within the WTO, an organization of 153 member countries representing all aspects of the global economy, the number of differing views and special considerations to be taken into before unilateral policies can be established is countless. Representatives within the WTO come from all sides of the debate, be they economists, diplomats, scientists or lawyers – and the initiative must survive extensive negotiation with equal consideration paid to scholarly concerns, economic calculations, political agendas and legal rulings.

The concept of embodied carbon, as relates to the entire life-cycle of a product intended for export to international markets is also important in the discussion of competitiveness, when applied to developed and non-struggling countries if it is not applied universally to all Members. Those countries implementing emissions reduction policies will have to compete with exports from countries with no mandatory emission reductions, where costs of production, and therefore the cost of the finished product, may be lower as a result. The basis for trade measures (e.g., border carbon adjustment) to level the playing field could be embodied carbon in products.(Kejun) It has also been suggested that opening the door to the regulation of NPR-PPMs in internationally traded products, in relation to carbon emissions, could also open the door to trade discrimination based on other non-product-related criteria, including labour and human rights practices.(Appleton) The impact this additional set of variables would have on the principles of fair and balanced trade between Members is yet another consideration adding to the widespread effects of carbon labelling on the global community.

CONCLUSIONS

The issue of reducing carbon emissions is a global conundrum, both economic and political. Environmental issues challenge fundamental notions of state sovereignty and jurisdiction, due in part to their cross-border implications. WTO Members are having difficulty reaching a consensus on how to manage the complex relationship between trade law and international environmental law, in particular with respect to the extent that trade measures can be used to encourage changes in foreign production practices. (Appleton) Yet there must be some middle ground to be discovered, where environmental concerns can be addressed while maintaining the proliferation of free trade. Article 2.2 of the TBT Agreement requires that technical regulations not create ‘unnecessary’ obstacles to international trade. Certain legitimate objectives are identified, including protection of human, animal or plant life or health, or the environment. These provisions are sufficiently broad to encompass carbon labelling schemes, as their underlying purpose is to preserve the environment for continued human, plant and animal existence. Perhaps, then, there is room after all for current WTO policies to bend enough to encompass a globally accepted scheme for carbon labelling, provided every effort is made to also encompass the provisions of Articles 11 and 12 of the TBT Agreement, ensuring that developing nations are equally represented in creation of all policies and given due assistance in applying them to their own industries.

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