

World Trade Law and Renewable Energy: the Case of Non-tariff Measures

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Over the last two decades, trade and environment issues have typically been a source of intense controversy and conflict in the world trading system. Renewable energy, however, represents an area where we believe that freer less-distorted trade and environmental protection have the potential to be mutually reinforcing. Historically, electrical energy itself has not been traded across borders, with some exceptions (Canada and the US and in the EU). However, with the de-monopolisation of electricity in an increasing number of jurisdictions, and the unbundling of functions such as generation, grid operation, transmission, and retailing as well as the development of financial instruments such as futures and options contracts for energy, the structure of the entire market is starting to change, complicating the analysis under WTO law. This article aims to raise questions and suggest areas where domestic and international policymakers may need to consider undertaking further analysis.

I. Introduction

This article, which closely follows a paper that REIL was asked to prepare by the United Nations Conference on Trade and Development (UNCTAD), considers the question of non-tariff barriers and renewable energy primarily from the perspective of the law of the World Trade Organization (WTO). Further work that REIL is engaged in will also consider regional and bilateral trade and investment agreements.

Over the last two decades, trade and environment issues have typically been a source of intense controversy and conflict in the world trading system, reflecting and intensifying cleavages between environmentalists and supporters of free trade, and between developed and developing countries. Renewable energy, however, represents an area where we believe that freer less-distorted trade and environmental protection have the potential to be mutually reinforcing. Within the United States, demonopolisation and restructuring for competition in the electrical utilities sector has led to new opportunities for renewables. The same ought to be true globally. The removal of barriers to trade in renewable energy equipment and technology prom-

ises to reduce the cost and increase the feasibility of meeting global environmental obligations. It also helps to unlock the enormous potential of renewable energy in the developing world, where conventional power has not solved the problem of rural electrification – a key to development in a number of countries. In addition, given the rapidly rising energy needs of the fastest growing developing countries, there is an urgent need for alternatives to fossil-fuel generation that are sustainable. As current events illustrate, the widespread expansion of nuclear power raises serious issues of national and international security, which are not present with renewables. Finally, the eventual possibility of global trading schemes in Renewable Energy Certificates would allow developing countries with a comparative advantage in certain kinds of renewable generation—wind or solar power, for instance—

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the opportunity to exploit that comparative advantage by providing users of energy elsewhere a means of satisfying obligations (or voluntary commitments) to use renewable energy in their own jurisdictions. This opportunity exists even in cases where trading the energy itself is not feasible.

The first part of the article (sections II-VI.), examines whether and to what extent, under the law of the WTO, government policies to promote renewable energy may be disciplined as non-tariff barriers. The second part (section VII.), addresses itself to whether and to what extent WTO law could be used to challenge or discipline policies (regulatory barriers) that disadvantage renewable energy.

Historically, electrical energy itself has not been traded across borders, with some exceptions (Canada and the US and in the EU). However, non-tariff measures that affect the goods and services that are inputs in the production, distribution, transmission and sale of electrical energy (such as oil, biofuel, photovoltaic panels, wind turbines or their components) often arise from the regulatory framework for electricity itself, even though it is trade in the inputs that is of concern, and the electricity itself is not being traded across borders as a 'commodity'. For instance, if the regulatory framework for electricity requires that a certain percentage of electricity fed into the grid be renewable energy, and that only certain sources or generation methods qualify, this will affect competitive opportunities for those goods (technologies, equipment, fuels) and services that are involved in the production, distribution, etc. of renewable energy. With the demonopolisation of electricity in an increasing number of jurisdictions, and the unbundling of functions such as generation, grid operation, transmission, and retailing as well as the development of financial instruments such as futures and options contracts for energy, the structure of the entire market is starting to change, complicating the analysis under WTO law.

This article is far from an exhaustive examination of the issues (for example, we do not at this juncture consider investment or intellectual property rules, on which separate work will be done by

REIL). The failure to consider these matters in this particular article should not be interpreted as a judgment that they are peripheral or secondary in importance: rather these omissions are the result of deadline pressures and related limits on the nature of the research and consultation with experts and industry officials within the time frame required. In many areas, the analysis is speculative, aimed at raising questions and suggesting areas where domestic and international policymakers may need to consider undertaking further analysis. Above all, it should be stressed that the paper raises these matters at a very general level. Whether any given governmental measure is consistent with WTO rules is a highly contextual question that may well depend on the exact design features of that particular measure, and its broader context -regulatory, technological and commercial. Thus, nothing in this paper should be considered as a judgment that any actual measure of any particular government violates WTO rules.

All references to WTO cases are to Appellate Body rulings, unless otherwise noted. Abbreviated citations are used for convenience in the body of the article. A list of Panel and Appellate Body reports with full citations is annexed to this article.

II. The GATT (General Agreement on Tariffs and Trade)

Energy inputs are in many obvious cases goods (e.g. biofuels or oil), and traded electrical energy is generally considered a good when bulk energy is traded across the border between vertically integrated power companies: therefore the General Agreement on Tariffs and Trade (GATT) will apply to many measures that relate to renewable energy and its competitive relationship to other kinds of energy.¹

1. Taxation measures and Article III:2 of the GATT (National Treatment)

Article III:2 of GATT governs the internal taxation of products by WTO Members; as interpreted judicially, Article III:2 contains two distinct obligations: 1) the obligation to tax identically 'like' imported and domestic products; and 2) the obligation that taxation on 'directly competitive or substitutable

¹ As will be discussed below in the Services section important issues arise as to the classification of various steps in the supply of energy as trade in goods and/or services in a new regulatory environment where vertically integrated power monopolies have been broken up into various competitive businesses in generation, transmission, grid operation, retailing, etc.

products' not be 'dissimilar' in such a way as 'to afford protection to domestic production'.² The assessment of whether two products are 'like' or 'directly competitive or substitutable' has been held judicially to be a matter of case-by-case examination of the facts, weighing all relevant evidence; the WTO Appellate Body has approved a technique of assessing both 'likeness' and whether products are 'directly competitive or substitutable' that consists in examining the factors enumerated in a GATT policy document, the Border Tax Adjustment Working Party, namely physical characteristics, end uses, and consumer habits. In addition, customs classifications may also be probative. While the issue of whether two products are 'directly competitive or substitutable' sounds like a matter of economic analysis, the Appellate Body (Korea-Alcoholic Beverages) has emphasised that this is a jurisprudential question based on the purpose of National Treatment in protecting equal competitive opportunities, and may be based on common-sense considerations of reasonable consumer behavior as well as empirical economic analysis of substitutability. A finding of likeness would normally entail a conclusion of greater affinity or similarity between the products in question than a finding of 'directly competitive or substitutable': this follows from the more stringent obligation imposed (identical rather than merely not 'dissimilar' obligation, as well as the fact that in the case of 'like products' – by contrast, with 'directly competitive or substitutable' products – the relevant is not qualified by its limitation to cases where different tax treatment would afford 'protection' to domestic production).

Not all taxation measures are the subject of Article III:2, which deals with National Treatment in taxation of products. Tax breaks for research and development, for instance, might well constitute subsidies within the meaning of the WTO Subsidies and Countervailing Measures (SCM) Agreement, if these measures are based on the government forgoing revenue that is 'otherwise due'. In addition, as is illustrated by the US-FSC case, income taxation rules may violate National Treatment with respect to the non-fiscal internal measures (Article III:4) of GATT if those rules result in a denial of equal competitive opportunities to imported 'like' products.

In the case of renewable energy fiscal measures that tax 'products', it is useful to distinguish several kinds of measures. The first could be described as

an excise tax on inputs in the production of energy that occurs in the taxing jurisdiction. In the EC context, Majocchi and Missaglia note that this 'seems the most convenient system for taxing energy. The early application in the production process combines two advantages: 1) the number of economic agents performing taxable transactions is small and easily checked; and 2) the tax burden is immediately shifted onto all energy consumers, thereby directly affecting their behavior.'³ However, in a world where such taxes are not harmonised, consumers in the taxing State can avoid the incentive effects of the tax by purchasing imports of energy from another jurisdiction, where inputs into the production of energy are taxed in a different manner, for instance, without any distinction between renewables and fossil fuels. One way of addressing this problem is by border tax adjustment; when the final product comes across the border, i.e. with energy, the importing State levies a tax on the inputs in its production in the foreign jurisdiction equivalent to the tax that would be levied if the energy had been produced domestically. A different way of addressing the problem is taxing energy itself differentially depending on the method of its production.

We now consider how each of these policy options might fare under the rules on internal taxation in Article III:2 of the GATT.

a. Tax on inputs without border tax adjustment

Differential taxation of fossil fuels as inputs in the product of energy is very likely to be consistent with Article III:2. The fuels in question are physically quite different than the technologies and materials involved in the production of renewable energy; consumers may well care about the environmental consequences that flow from these physical differences (see EC-Asbestos), and even though

2 This second obligation is found by the Appellate Body through combining the language of Article III:2 itself with the language concerning 'protection' in the preamble Article III:1 as referenced in an interpretative note to Article III. Such 'interpretative notes' form an integral part of the treaty. See Report of the Appellate Body, 'Japan – Taxes on Alcoholic Beverages', WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, 4 October 1996.

3 Majocchi/Missaglia 'Environmental Taxes and Border Tax Adjustments: An Economic Analysis', in Milne/Deketelaere/Kreiser, et al. (eds), *Critical Issues in Environmental Taxation: International and Comparative Perspectives*, Vol. 1, 2003, p. 347 (hereinafter *Critical Issues*).

it could be argued that the end uses (production of electrical energy) are the same, based upon the existing jurisprudence (EC-Asbestos), it is improbable that such a common end use would overcome the other evidence pointing to unlikeness. A similar analysis would occur with respect to whether the products are 'directly competitive or substitutable'. In any case, unless somehow designed or structured to favor domestic producers, such a tax could not be found to 'afford protection to domestic producers'.

But this last observation leads to an important caveat, the fact that a tax scheme generally treats renewable inputs more favorably than fossil fuel inputs in itself, as we have suggested, will not make this scheme run afoul of Article III:2. However, the legitimacy of favoring renewables through taxation instruments will not save a tax scheme that is discriminatory in other respects, for instance, as between different fossil fuels (e.g. oil versus coal). Similarly, the analysis of 'likeness' or 'directly competitive or substitutable' might have a different flavor were the WTO adjudicator to be faced with a scheme that favors domestic renewables inputs over imports. While issues of intent or motivation are not supposed to influence determinations of 'likeness' or 'directly competitive or substitutable', in practice this is a case-by-case and highly contextual kind of determination, and in weighing the relative importance of the various probative factors (physical characteristics vs. end uses, for example), the adjudicator may well be influenced, at least subconsciously, by the overall purpose of National Treatment, as stated in III:1, which is to avoid 'protection' of domestic products.

b. Excise tax on inputs with border tax adjustment

This issue was the subject of adjudication in the GATT Superfund case, where the EC challenged a tax on certain chemical inputs, which, in the case of imported products, was collected as a tax on the final product at the border. According to the EC, such a tax was impermissible under the GATT because the polluting effects to which the tax was directed occurred not in the taxing country but in

the country of production. The GATT panel held that the purpose of the tax was irrelevant to the right of border tax adjustment in GATT practice, and so the United States was permitted to tax inputs based on their polluting effects in the foreign country of production, as long as the amount of the tax did not exceed the amount imposed on like domestic inputs. Thus, a key condition on the WTO legality of border tax adjustment is that the tax be applied in a non-discriminatory manner to both domestic and imported products. It cannot favor domestic sources.

The Superfund ruling makes it clear that a WTO Member would be able to border tax adjust an excise tax on inputs in energy production by imposing the comparable tax when the final product, energy, is traded across the border. Nevertheless, Dröge et al. claim that 'WTO law remains unclear about the eligibility of indirect taxes [taxes on products] for adjustment.'⁴ Their conclusion is based on lack of consensus in the 1970 Working Party on Border Tax Adjustment concerning whether particular kinds of taxes should be singled out as eligible for border tax adjustment. However, this lack of consensus is irrelevant, given the affirmation by the adopted panel ruling in Superfund that Article III:2 of GATT allows border tax adjustment as a general rule.

c. Differential taxation of energy based on the source of generation

Another kind of tax measure to promote renewables would entail taxing domestic and imported energy differently, depending on the generation source, whether renewable or non-renewable. In evaluating this kind of measure under GATT III:2, the WTO adjudicator would have to consider whether electrical energy from a non-renewable source is 'like', or 'directly competitive or substitutable' with, electrical energy from a renewable source. Much of the debate about how this analysis might be done revolves around the controversy over the so-called 'product/process distinction', the notion that the GATT does not permit differential treatment of products based on their method of production as opposed to their properties as products for consumption.

Without rehashing this controversy here, to begin with we note the fundamental proposition that renewable energy as a product for consump-

⁴ Dröge et al., 'National Climate Change Policy – Are the New German Energy Policy Initiatives in Conflict with WTO Law?', German Inst. for Econ. Research, Discussion Paper 374, 2003, p. 28.

tion is not 'like' non-renewable energy. To start with a simple example, putting a solar panel on one's roof is fundamentally a different consumption decision from buying energy off the grid, which is produced by conventional power sources; the power generated by the solar panel has different characteristics (intermittency for example, and lack of vulnerability to grid failures) that makes it unlike conventional power. Where renewable generation is on-grid, the difference is also evident; consider the particular issues involved in connectivity given the intermittent nature of renewable generation and the distant and dispersed nature of the generation activity (e.g. wind farms).

These are all evident differences that apply if one wants to consider renewable energy as a product for consumption. At the same time, the approach to 'likeness' and 'directly competitive and substitutable' articulated by the Appellate Body does not predetermine a conclusion one way or another concerning methods of production. The AB has emphasised (Japan-Alcohol and EC-Asbestos) that factors other than those in the Border Tax Adjustment Working Party may, in an appropriate case, be dispositive of whether two products are 'like' or 'unlike'. The Appellate Body has also emphasised the need for the adjudicator to examine all relevant factors in a given case and context, and to consider all the evidence pointing either in the direction of a finding of 'likeness' or otherwise. There is simply nothing in the jurisprudence that would justify a per se exclusion of production methods from the analysis of 'likeness' or 'directly competitive or substitutable' nor, on the other hand, is there anything to suggest that production methods could be, on their own, dispositive of a finding of 'unlikeness' or a lack of direct competitiveness or substitutability.

This being said, electrical energy differs from other, or most other, traded commodities. As Howse and Heckman note, 'It cannot be stored; production and consumption of electricity must be simultaneous.'⁵ To distinguish between the process of producing energy and some separate commodity that is consumed appears to be at odds with the physical characteristics of electricity itself. Put simply, energy is a process. Thus, in considering 'physical characteristics' in the context of determining whether renewable energy is like or unlike non-renewable energy, the WTO adjudicator would almost necessarily, on the basis of sound science, be required to consider the physical nature of a process.

Further, evidence that consumers care about whether energy is renewable or not would be highly probative of 'likeness' or 'direct competitiveness or substitutability'.⁶

Finally, while per se distinguishing in taxation between renewable and non-renewable sources would, as suggested, quite possibly be permissible under Article III:2, some schemes of this character may also contain discrimination against imports, which would run afoul of III:2. An example is the Finnish scheme that was found invalid under the Treaty of Rome rules on free trade by the European Court of Justice.⁷ Finland taxed domestic energy under rules that provided for different rates of tax depending on the method of production; however, Finland also applied the highest of these rates to imported energy, regardless of production method, on grounds that it was difficult to verify the sources of imported energy. The Court held that European internal trade law permitted differences in taxation based on production method and raw materials used in the creation of energy, but that the scheme was nevertheless impermissible in that it was not applied even-handedly to domestic and imported energy. Van Calster notes that the court seemed particularly concerned that 'the Finnish legislation did not even give the importer the opportunity of demonstrating that the electricity imported by him had been produced by a particular method in order to qualify for the rate applicable to electricity of domestic origin produced by the same method.'⁸

The feature of the Finnish scheme that was found problematic by the European Court would also likely lead a WTO adjudicator to find a violation of Article III:2, since imported renewable sourced energy is being taxed at a higher rate than domestic renewable sourced energy.

5 Howse/Heckman, 'The Regulation of Trade in Electricity: A Canadian Perspective', in Daniels (ed.), *Ontario Hydro at the Millennium: Has Monopoly's Moment Passed?*, 1996, p. 106.

6 For strong evidence that consumers in some jurisdictions have a strong preference for renewables, see Lehr/Guild/Thomas et al., 'Listening to Customers: How Deliberative Polling Helped Build 1,000 MW of New Renewable Energy Projects in Texas', Nat'l Renewable Energy Lab., NREL/TP-620-33177 2003.

7 Case C-213/96 – *Outkumpu Oy v Piiritullikamari* [1998] ECR I-1777.

8 Van Calster, 'Topsy-turvy: The European Court of Justice and Border (Energy) Tax Adjustments-Should the World Trade Organization Follow Suit?', in *Critical Issues*, supra note 3, p. 324.

2. Non-fiscal regulatory measures and Article III:4 of the GATT

Article III:4 of the GATT sets out the National Treatment obligation with respect to non-fiscal laws, regulations and requirements. Such non-fiscal measures must accord no less favorable treatment to imports than to 'like' domestic products. The determination of whether a measure is in violation of Article III:4 entails two distinct steps. The first is to ascertain whether the imported product and the domestic product are 'like'. The analysis of likeness under Article III:4 entails a weighing and evaluation of the same kinds of factors as is the case for fiscal measures – including physical characteristics, end uses, and consumer habits – with the possibility that other factors may, in certain cases, also be probative of likeness (EC-Asbestos). If indeed the domestic and the imported product are determined to be 'like', the adjudicator will proceed to the second step of determining whether the regulatory distinction between the two products results in less favorable treatment of imports (EC-Asbestos; Korea-Beef). As the Appellate Body has emphasised, not all regulatory distinctions between 'like' products are impermissible under Article III:4, but rather only those which result in less favorable treatment for the group of imported products in comparison to the group of like domestic products. Thus, the adjudicator will consider whether the regulatory distinction in question is, overall, disadvantageous to imports. The fact that a facially neutral regulatory distinction results in some one imported product being treated worse than some one domestic product will not be enough to establish 'less favorable treatment'. Instead, there must be in the structure and design of the regulatory scheme some

systematic bias or orientation in favor of 'like' domestic products.

Prominent examples of non-fiscal regulatory measures to promote renewable energy are minimum price and quota measures. The characteristics of these policy instruments are summarised by Fouquet et al.: 'The minimum-price system is characterised by a legally determined minimum price and an obligation on the part of the grid operator or utility to purchase „green“ electricity. In contrast, the key components of quota schemes are government mandates for specified groups of market participants to purchase or sell a minimum quantity of capacity or amount of electricity from renewable energy. The government allocates certificates in order to ensure compliance with the mandated quantity.'⁹

Although there may be some issue as to whether minimum price schemes are 'subsidies' within the WTO definition (and thus they might be subject to subsidies disciplines), it is likely that, where imposed on both domestic and imported energy, minimum price and quota measures would be considered as internal laws, regulations and requirements within the meaning of Article III:4.¹⁰

In the Canadian Beer case, a GATT panel addressed a measure that established a minimum price for the sale of beer in government retail monopoly stores. The panel declined to rule that minimum price requirements as such violate Article III:4 of the GATT in providing less favorable treatment to lower cost foreign producers of like products. It did find, however, that Canada violated Article III:4 in the way in which it determined the applicable minimum price, based on the cost structure of domestic beer producers; by the use of a formula linked to domestic producers' costs, the very design and structure of the scheme discriminated against foreign producers.

There are important implications of this ruling for the manner in which minimum prices are set in renewable energy schemes: minimum prices that are determined exclusively or largely based on domestic costs of renewable energy could be suspect under Article III:4. The minimum price should be set in such a way as to allow for equal competitive opportunities between domestic and imported sources of renewable energy. This may prove problematic for minimum price schemes that are intended to address not only environmental goals but also industrial policy goals of promoting a domestic renewable energy industry.¹¹ It may be in

9 Fouquet et al., 'Reflections on a Possible Unified EU Financial Support Scheme for Renewable Energy Systems (RES): A Comparison of Minimum-price and Quota Systems and an Analysis of Market Conditions', EREF and Worldwatch Institute, Position Paper 2005, p. 12.

10 The argument that minimum price requirements constitute 'subsidies' in WTO law will be addressed later in this paper in the section on Subsidies. Similarly, the argument that quotas may be quantitative restrictions within the meaning of Article XI of the GATT, and thus *per se* illegal, is addressed below in the discussion of Article XI.

11 In the PreussenElektra case, discussed below in the Subsidies section of this paper, the Advocate General noted before the European Court of Justice that the German minimum price purchase requirement did not permit the sourcing of the required amount of renewable energy from abroad (paragraphs 200-202).

practice however that no foreign renewable energy sources exist that are willing to supply the needs of the regulating State at a lower price than the price required to make the domestic industry viable. This would be a different state of affairs than existed in the case of the Beer dispute, where American competitors of Canadian beer producers were able and willing to supply at prices below the legally imposed minimum.

The case of quota schemes poses a rather different set of issues. In a document produced for the Commission on Environmental Cooperation under the North American Free Trade Agreement, Horlick, Schuchhardt and Mann have argued that US State renewable portfolio standard (RPS) laws, which require retail sellers of electricity to include in their portfolios a certain percentage or amount of electricity from renewable sources, may violate the National Treatment provisions in the GATT.¹² This conclusion is in large part based on the assumption that 'Electricity produced from renewable resources has exactly the same qualities as electricity generated from other (conventional) resources and it is the same whether domestically produced or imported.' On the basis of this assumption Horlick, Schuchhardt and Mann apparently consider it a foregone conclusion that electricity from renewable sources would be found to be a like product to electricity from non-renewable sources.

As has been pointed out in lengthy response to their study by the Union of Concerned Scientists, the legal analysis of Horlick, Schuchhardt and Mann is questionable in some respects. It seems based on the presumption that the WTO adjudicator could never find that two products with similar physical characteristics are nevertheless 'unlike', for example, because the other factors probative of 'likeness', such as consumer habits, point to a finding of 'unlikeness'.¹³ As discussed above in the section of this paper on fiscal measures, this presumption is not born out by a close reading of the doctrinal framework established by the Appellate Body in EC-Asbestos and Japan-Alcohol.¹⁴ While in these cases the physical characteristics of the products played a large role in the determination, the Appellate Body also went out of its way to stress that every case is different, and that the analysis of likeness is an inherently contextual undertaking of weighing all the relevant evidence (the Appellate Body also said in EC-Asbestos that where physical characteristics are significantly different there

must be considerable evidence on other matters weighing in the other direction to establish 'likeness'; but it did not thereby endorse the reverse proposition that physical similarities establish even a rebuttable presumption of likeness. This reverse proposition would be incompatible in any case with the general burden of proof on the complainant in WTO litigation).

The evidence must necessarily include evidence of consumer preferences and habits, a factor that the Appellate Body has held must be addressed before making a determination of likeness. In this respect, the Union of Concerned Scientists notes: 'The public's demand for renewables, as evidenced by the interest in diversity and the willingness to pay more for the product, demonstrates that the purchase decision has more dimensions than merely physical ones.' If the Appellate Body were of the view that physical similarities alone could always be an adequate basis for a finding of likeness, regardless of other kinds of evidence pointing towards 'unlikeness', its requirement that all the evidence be weighed and all the factors considered in every case would make no sense: it would make a farce of judicial economy to require an adjudicator to go on to look at other factors and evidence, if indeed, physical characteristics, where sufficiently similar, could be simply dispositive of likeness.

Even if renewable sourced energy were deemed to be a 'like' product to non-renewable sourced energy, a finding of Article III:4 violation would require the additional step of a determination of 'less favorable treatment' of imports. Horlick et al. conclude that 'the generating methods included in the renew-

12 Horlick/Schuchhardt/Mann, 'NAFTA Provisions and the Electricity Sector', North American Commission for Environmental Cooperation, Article 13 Initiative, Background Paper, Electricity and the Environment 2001 (hereinafter CEC Background Paper).

13 Hempling/Rader, 'Comments of the Union of Concerned Scientists to the Commission for Environmental Cooperation in response to its „NAFTA Provisions and the Electricity Sector“', Background Paper to its 22 October 2001 Working Paper Entitled 'Environmental Challenges and Opportunities of the Evolving North American Electricity Market', 2002.

14 See CEC Background Paper, *supra* note 12, p. 9. Horlick/Schuchhardt/Mann admit there is no textual basis in the GATT treaty for their proposition: 'There are no specific provisions in the text of the GATT 1994 itself which plainly discipline countries from making a distinction between traded like products based on criteria or factors which are not physically embodied in the product.' As a scientific matter, it may well be misleading in any case to think of the process of producing energy as somehow not physically embodied in the energy itself. As noted earlier in this paper, energy is inherently dynamic – it is a process of transformation. The product is the process.

able portfolios tend to disadvantage out-of-State producers, including foreign importers, because of different regulatory, topographic and environmental conditions which influence electricity generation in different regions and countries.¹⁵ National Treatment, however, cannot possibly be interpreted to require a government in its regulations to neutralise the comparative advantage that some producers have over others due to such locational factors. This would be contrary to objectives of the WTO as stated in the Preamble to the WTO Agreement, including optimal use of the world's resources.

In EC-Asbestos the Appellate Body has suggested that the notion of 'less favorable treatment' must be read in light of the purpose of avoiding 'protection' stated in Article III:1. It will not be appropriate to find 'less favorable treatment' where the disadvantage to imported products stems entirely from foreigners' locational disadvantages in producing a product that meets a regulatory condition rationally designed to achieve a non-protective purpose. However, Horlick et al. point to definitional features of some States' portfolio standards that include within eligible renewable sources some kinds of renewable energy and exclude others, in such a manner as to favor systemically domestic producers. From the perspective of the environmental and energy security goals that underpin favoring renewables as such over non-renewables, these definitional features are not rational or justified, according to Horlick et al. If this is indeed true – and this is a matter strongly contested by the Union of Concerned Scientists – a finding of 'less favorable treatment' of the group of imported products under III:4 might well be correct.

Along similar lines, the meaning of 'like' product under III:4 is able to address the concerns of Horlick et al., without resorting to their forced reading that renewable sourced energy is a like product to non-renewable sourced energy on account of physical similarities alone. Distinctions in renewable portfolio standard regimes that distinguished between different sources of renewable energy would be analysed under Article III:4 by first of all determining whether domestic energy from renewable source A (included in the portfolio standard) is a like product to imported energy from renewable

source B (not included in the portfolio standard). A WTO adjudicator might conclude that as a general matter renewable sourced energy is an 'unlike' product to non-renewable sourced energy, but, conversely, when comparing energy from two different renewable sources, find that the products are indeed 'like'. There is thus no need to force the reading of III:4 to treat all physically similar energy as 'like' in order to avoid the kind of arbitrary discrimination between different renewable sources that Horlick et al. may be quite legitimately worried about.

Article XI of the GATT and renewable energy quotas

As already noted, some renewable energy measures specify numerical targets that grid operators, retailers or other economic actors must meet. Article XI of GATT, which has the heading 'Quantitative Restrictions', bans 'prohibitions and restrictions' on imports and exports. There is a theoretical possibility that quantitative renewable energy measures could be considered as 'prohibitions' or 'restrictions' on imports, on the notion that these measures impose a quantitative limit on the amount of non-renewable energy that can be sold into the market in question, including imported energy. In the India-Autos case, the panel took a very broad view of the measures covered by Article XI, which included de facto prohibitions and restrictions that did not formally restrict imports. However, in all of the cases where a broad view of the measures covered by Article XI was articulated, even if the measures in question did not have the form of a prohibition or restriction but some other kind of regulatory or administrative action nevertheless the action was targeted at imports or exports. In other words, even on the expansive view of Article XI, quantitative measures that apply to both domestic and imported product should be examined under Article III:4 of GATT, not Article XI. The essential distinction is articulated by Prof. Joost Pauwelyn: 'The prohibition in Article XI was only intended to prevent quantitative restrictions imposed solely on imports (such as a ban or quota on shoe imports to protect domestic shoemakers). To apply the Article XI prohibition to all measures, including domestic regulation, on the sole ground that they restrict imports would fly in the face of GATT's presumption in favor of regulatory autonomy and nullify

¹⁵ *Ibid.*, p. 10.

the rights of WTO Members under Article III of GATT.¹⁶

3. Article XX of the GATT: general exceptions

Assuming that either fiscal or non-fiscal measures on renewable energy were found to violate one or more of the provisions of the GATT discussed above, they might nevertheless be justified under one or more of the exceptions in Article XX. Of particular relevance are the XX(b) exception for measures necessary for the protection of human or animal life or health and XX(g) measures in relation to the conservation of exhaustible natural resources. Under XX(b) it would be necessary to demonstrate that there is a real health risk from non-renewable energy and that measures to promote renewables are either an indispensable means of addressing the risk or 1) that there is a close connection between the renewables measures and solving the health risk and 2) the trade restrictive impact is not disproportionate to the contribution of the measure to addressing the risk (EC-Asbestos, Korea-Beef). A range of documents from international organisations, and those that have emerged from intergovernmental conferences such as Bonn 2004, attest to the role of renewables in addressing the risks from conventional energy, and are evidence of wide and growing recognition of this role by the international community.

A condition of maintaining measures based on an Article XX justification is that they might be applied so as to constitute unjustifiable or arbitrary discrimination between countries where the same conditions prevail or a disguised restriction on international trade (this is based on the 'chapeau' or preambular paragraph of Article XX). This condition, it must be emphasised, deals only with application through administrative or judicial action, not the scheme as such (US-Shrimp, US-Shrimp 21.5). Unjustifiable discrimination may result from the application of a scheme which is rigid and unresponsive to different conditions in different countries. Arbitrary discrimination may occur if there is a lack of due process and transparency in the manner in which the criteria of the scheme are administered, if there are discriminatory effects on foreign interests (US-Shrimp). There is lack of clear judicial guidance so far on the meaning of 'dis-

guised restriction on international trade' (US-Reformulated Gasoline).

Article XX(g) permits otherwise GATT inconsistent measures that are 'in relation to the conservation of exhaustible natural resources.' A specific condition of Article XX(g) is that the trade measures to be justified must be taken in tandem with comparable measures on production or consumption that apply to the domestic market (even-handedness). The air is an exhaustible natural resource according to GATT/WTO jurisprudence. As a general matter, the meaning of 'exhaustible natural resources' is to be guided by emerging legal and policy norms on sustainable development and biodiversity (US-Shrimp). Unlike with XX(b) where the connection between the measure and its aim is expressed by the term 'necessary' leading to the requirement that the measure either be indispensable or have a close connection to its aim and a not disproportionate trade impact, the language 'exhaustible natural resources' expresses the concept of a rational nexus between the measure and its aim, a 'real' connection (US-Shrimp). Additionally, the measure must not be disproportionately wide in reach or scope (US-Shrimp).

A longstanding issue is whether, under Article XX, a WTO Member can justify measures aimed not only at dealing with local, i.e. domestic environmental externalities, but also with global environmental commons challenges and, further, whether such measures can include measures aimed at inducing other States to adopt appropriate policies to protect the commons. In US-Shrimp, the AB made it clear that in principle Article XX was available to address other States' policies (Paragraph 121). At the same time the AB did not resolve the question of whether some kind of territorial nexus between the country taking the measure and the environmental problem is needed. Given the long term effects of the use of non-renewable energy sources are universal, and given the many immediate transboundary effects, if such a nexus were indeed required, it would not be hard to show in the case of renewables measures. Notably, in US-Shrimp, the AB suggested that, even supposing a

16 Pauwelyn, 'Rien ne va plus? Distinguishing Domestic Regulation from Market Access in GATT and GATS', unpublished manuscript, Duke Univ. Law Sch. 2004. As Pauwelyn notes, the Working Party Report on The Haitian Tobacco Monopoly refused to consider quantitative measures that were not targeted at imports to be a violation of Art. XI.

territorial nexus were to be required it was satisfied by the mere fact that some members of the endangered species of sea turtles were to be found in US waters some of the time. This means that even if the AB or some members of the AB had been leaning towards a 'nexus' requirement, what was being considered was a kind of 'minimal contacts' test.

III. The WTO Technical Barriers to Trade (TBT) Agreement

In addition to the National Treatment obligation in GATT Article III:4, most mandatory domestic requirements on traded products will also come under the disciplines of the WTO TBT Agreement, because they will fall within the definition of 'technical regulations'. The main disciplines that are distinctive in the TBT Agreement are the requirement that international standards be used as a basis for technical regulations (2.4), and the requirement that technical regulations not constitute an unnecessary obstacle to trade (2.2). This means that the measure must not be more trade restrictive than is required to meet a Member's legitimate objective (there is a non-exhaustive list of 'legitimate objectives' that includes, *inter alia*, 'protection of human health or safety, animal or plant life or health, or the environment.'

Further, where the measure is 'in accordance with' relevant international standards, and is 'prepared, adopted or applied' for one of the listed legitimate objectives, it is rebuttably presumed not to create an unnecessary obstacle to trade, within the meaning of 2.2.

There is no definition of 'international standards' in the TBT Agreement. There is however a requirement that international standard setting bodies be open to participation by the relevant standard-setting bodies in all WTO Member States.

It will be immediately observed that international standard setting will have a very significant impact on the WTO-compatibility of renewables measures. This includes any international standards that define what is a renewable energy source, and norms of reliability, safety etc. for renewable energy technologies and operations.

'Technical Regulations' include reporting and verification requirements to ensure that the energy is from a renewable source. Such requirements must, then, not pose an unnecessary obstacle to trade by imposing an undue burden on traded energy. Similarly, mandatory labeling schemes are likely to fall within the meaning of 'technical regulations';¹⁷ these schemes also must be operated such that the requirements of labeling and the conditions that must be satisfied to use a 'Green' label do not result in an unnecessary obstacle to trade. In these areas, too, agreed international norms can do much to facilitate trade and ensure that domestic measures are not susceptible to challenge under the TBT Agreement.¹⁸

The Effects of tradeable renewable energy certificates on the compliance of renewables measures with the GATT and TBT Agreements

Trading of government-imposed obligations to purchase renewable energy, as opposed to trading in energy itself, is trade in services not trade in goods, and will be considered as such in the discussion on Services later in this paper. However, as the Appellate Body held in *Canada-Periodicals* measures on services may also affect trade in goods and therefore be subject to the WTO disciplines that pertain to trade in goods.¹⁹ Any system of tradeable certificates presupposes the willingness of the government that is imposing an obligation with respect to renewable energy to accept the certificate in lieu of the certificate owner herself fulfilling the obligation. The terms and conditions that the obligation-imposing government sets for acceptance of certificates in lieu of specific fulfillment of the obligation may in some instances have effects on trade in goods. An obvious example would be where the energy purchases attested to by the certificate must be purchases of domestic renewable energy. The government may have a legitimate reason for such

17 Dröge et al., *supra* note 4, p. 17.

18 It should be noted that the TBT Agreement also imposes on governments a requirement that they take measures to ensure that 'voluntary' standards, including those that are emitted by non-governmental bodies, observe the principles underlying disciplines on mandatory governmental regulations. In this way, TBT norms may also apply for instance to industry-developed standards or to decisions of a private enterprise that acts as a market operator in a demonopolised electricity system (although the market operator as discussed elsewhere in this paper might also be subject to discipline under the 'State Trading Enterprises' provision of the GATT, where the market operator is acting pursuant to a statutory right or privilege.)

19 See also Werksman/Lefevre, 'WTO Issues Raised by the Design of an EC Emissions Trading System', FIELD, Scoping Paper No. 3, 1999.

a restriction, where its policy goal in encouraging renewables is to reduce local environmental externalities from fossil fuel or nuclear generation activities. A certificate attesting to the purchase of renewable energy by some other party in some other jurisdiction by definition does not indicate a reduction in the actual use of non-renewable energy within the obligation-imposing jurisdiction, and a corresponding reduction in local environmental externalities. By contrast in a domestically-limited certificate trading system, one can always be sure that some counterparty is in fact consuming renewable energy in lieu of non-renewable energy that is being produced, with attendant environmental externalities, on the territory of the obligation-imposing country. At the same time, the exclusion of foreign energy from the trading scheme would appear to be discriminatory under the GATT National Treatment standard. The limitation might be justified under Article XX of the GATT: however, given that emissions from fossil fuel generation are recognised in many international instruments as a global environmental problem, it is an open question whether under Article XX a WTO Member could justify discrimination based on the idea that its view of the problem is one that is limited to local externalities.

When we turn to internationally traded certificates, the analysis is very different. Such certificates greatly expand the opportunities of out-of-jurisdiction producers of renewable energy; the existence of such a trading program allows out-of-jurisdiction producers, indirectly, to fulfill the demand for renewable energy created by the government obligation, even if it would be infeasible or uneconomical for those out-of-jurisdiction producers to wheel the energy itself across the border into the obligation-imposing jurisdiction. The creation of these indirect opportunities for out-of-jurisdiction producers to supply the government-created demand for renewable energy in the obligation-imposing jurisdiction serves to counter arguments that the obligations in question inherently favor domestic producers of energy, renewable or non-renewable, because of technical or other barriers to foreign renewable producers selling energy itself across the border into the obligation-imposing jurisdiction.

At the same time, the obligation-imposing government will necessarily dictate the terms and conditions on which it will recognise renewable energy that is certified from out of jurisdiction sources as

counting for the satisfaction of the certificate-holder's obligation. These terms and conditions will affect the economic opportunities of renewable energy producers in other WTO Member States. But they will not necessarily affect the competitive opportunities of traded products, unless the terms and conditions apply to energy itself that is traded across the border. Where they apply to energy that is being generated in a foreign jurisdiction by renewable sources and being sold (as energy) in that jurisdiction, then the only trade is in the certificates, not the energy, and the terms and conditions in question would be disciplined by the GATS including the provisions on financial services.

IV. Subsidies

Export subsidies and subsidies tied to domestic content requirements are prohibited by WTO law (GATT Article XVI; Subsidies and Countervailing Measures (SCM Agreement)). However, non-prohibited subsidies nevertheless may be 'actionable' under WTO law²⁰ if they have certain kinds of adverse trade effects. Actionability means either that a complaint can be made against the measure in question by a WTO Member government in WTO dispute settlement, or that the subsidy may be addressed through unilateral countervailing duties imposed by the government of an affected country in compliance with the procedures set out in the SCM Agreement and pursuant to domestic law. Countervailing duties may only be imposed where it can be shown that the subsidy has caused injury to the domestic industry in the country imposing the duties through the import of competing 'like' subsidised products. Where the domestic industry is not injured or threatened with injury from subsidised imports, countervailing duties are an impermissible measure under WTO law.

In the analysis which follows we shall focus on the criteria for a subsidy to be actionable in the sense of the subsidy measure giving rise to a valid complaint in WTO dispute settlement.

²⁰ The text of the SCM Agreement also refers to some particular subsidies that are deemed 'non-actionable' including, notably some R & D and environmental subsidies (Article 8.2 (a) and (c)). However, this safe harbour for these classes of subsidies expired some years ago by virtue of Article 31, which envisaged negotiations that would review and perhaps modify these classes of 'non-actionable' subsidies. These negotiations have not been brought to a successful conclusion.

First of all, in order to be actionable, the measure must conform to the definition of a subsidy in the SCM Agreement. Two essential components of this definition are that there is a financial contribution by government and a benefit received by the recipient.

'Financial contribution' is a defined term itself in the SCM Agreement, and explicitly includes a range of situations other than direct cash payments, such as provision of goods and services or tax breaks where the government foregoes revenue 'otherwise due'.

'Benefit' denotes the requirement that the subsidy must confer a competitive advantage on the recipient; the notion of advantage is understood by reference to the conditions the recipient would otherwise have to face in a competitive marketplace, absent the government intervention in question (Canada-Aircraft; Canada-Lumber). The benchmarking in question is assisted by Article XIV of the SCM Agreement, which provides a non-exhaustive list of 'market' benchmarks: for example, in the case of equity capital infusions by government, the infusion 'shall not be considered as conferring a benefit unless the investment decision can be regarded as inconsistent with the usual investment practice (including for the provision of risk capital) of private investors in the territory of that Member.' (14(a)). In the case of provision of goods or services or purchase of goods and services, a benefit only exists if the provision is made 'for less than adequate remuneration' or the purchase is made 'for more than adequate remuneration', with regard to 'prevailing market conditions for the good or service in question in the country of provision or purchase (including price, quality, availability, marketability, transportation and other conditions of purchase and sale).'

As a general matter, the WTO Appellate Body has acknowledged that correctly identifying a „benefit“ and whether it exists can be a complex matter in situations where the market conditions themselves have been pervasively influenced by government intervention, and therefore a meaningful 'market' benchmark for 'benefit' is elusive (see Canada-Lumber, US-Privatization CVDs). This consideration may be of no little importance in the case of financial support measures for renewable energy, for the 'market' against which the competitive advantage conferred by the financial support measure is supposed to be defined (the 'benefit'), is often

a market that historically has been shaped in terms of investment conditions, prices, supply and other relevant market factors by pervasive government action (usually in favor of non-renewable energy). For example, does a government loan or guarantee for investment in renewable energy constitute a 'benefit' or competitive advantage, under market conditions where private providers of capital almost never fully capitalise a major energy project without some kind of government support or guarantee? The practices of the marketplace themselves, in other words, may assume and internalise government support measures.

In addition to meeting the requirements of 'financial contribution' and 'benefit', in order to be actionable a subsidy must also be specific. That is, the terms of the government support program must target the subsidy to some specific or limited class of users, either particular industries or firms; a subsidy may be de facto specific, however, even if not by its terms targeting certain industries or firms, where a limited sub-set of industries or firms are the predominant or disproportionate users of the subsidy. It must be appreciated that the determination of specificity is a matter of locating a point along a spectrum. On one end there are obviously specific subsidies such as the bailout of a single enterprise. At the other end there are obviously non-specific subsidies, such as government provision of universal health care, which are 'used' throughout the entire economy. (See the Report of the Panel, United States-Softwood Lumber (Final Countervailing Duty Determination)).

In addition to meeting the requirements of 'financial contribution' and 'benefit' and being specific, a subsidy must cause certain 'adverse effects' in order to be successfully challenged as 'actionable' in the WTO. These adverse effects are listed in Article 5 of the SCM Agreement, and include injury to domestic producers of a like product in competition with the imported subsidised product (injury in this sense must exist if countervailing duties are to be imposed); nullification or impairment of benefits accruing 'directly or indirectly' under the GATT, in particular tariff concessions; or serious prejudice to the interests of another Member. 'Serious prejudice' is further defined in Article 6.3. To show 'serious prejudice' the complaining WTO Member must show that the effect of the subsidy is to displace imports of a 'like' product into the market of the subsidising Member or to displace

exports of the complaining Member to a third country market; or significant price suppression or price undercutting in the same market with respect to like products; or finally 'the effect of the subsidy is an increase in the world market share of the subsidising Member in a particular subsidised primary product or commodity [footnote omitted] as compared to the average share it had during the previous period of three years and this increase follows as a consistent trend over a period when subsidies have been granted.'

It will be immediately observed that there are many hurdles that a complainant must overcome to successfully challenge an 'actionable' (non-prohibited, non-export subsidy) in WTO dispute settlement. Outside the context of agriculture (discussed below) where domestic support has been a matter of considerable tension and controversy and where the Agreement on Agriculture has its own complex rules which interact with the SCM rules, there has so far not been much litigation interest in the WTO with respect to 'actionable' subsidies. There are, however, numerous cases where the United States has imposed countervailing duties on such subsidies.

Subsidies are a persuasive form of government intervention to support renewable energy.²¹ In this paper, we can only very selectively examine how the features of some of these programs might be considered under the various criteria discussed above.

One issue that has already arisen in the context of the European internal competition law is whether minimum price requirements could be considered subsidies due to their effect of guaranteeing revenues in excess of what would exist without government intervention. In the *PreussenElektra* case, the European Court held that minimum price purchase requirements under German law could not be considered „State aid“ in European law because of the absence of any direct or indirect transfer of State resources.²² In the WTO SCM Agreement, by contrast, a 'financial contribution' includes a situation where 'a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in [SCM Agreement Article 1.1(a)(1)] (i) to (iii) which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by government.' Since (iii) includes 'purchas-

ing goods', the argument is that a situation where the government directs a private actor to purchase goods at a higher than market price is included within the meaning of 'financial contribution' even if the government does not incur any cost itself. In the *Canada-Aircraft* case (paragraph 160), the Appellate Body observed that 'financial contribution' could include those situations where a private body has been directed by the government to engage in one of the actions defined in the SCM Agreement Article 1.1(a)(1)(i)-(iii), even if government does not bear the cost of such delegated action.

This being said, one should not jump to the conclusion that the German minimum price purchase requirements would fully meet the relevant definition of 'financial contribution', i.e. the definition that applies where the government entrusts or directs a private body. The relevant provision also requires that the function entrusted or delegated to the private body be one that is normally performed by government. The German minimum price purchase requirements do not represent a delegation of a governmental function to any private body; rather they represent a regulation of the electricity market, and their directive character goes to regulating market behavior and transactions, not imposing a governmental function on a private body. Here, the observations of the panel in *US Export Restraints* are relevant: '... [I]t does not follow ... , that every government intervention that might in economic theory be deemed a subsidy with the potential to distort trade is a subsidy within the meaning of the SCM Agreement. Such an approach would mean that the „financial contribution“ requirement would effectively be replaced by a requirement that the government action in question be commonly understood to be a subsidy that distorts trade.' (paragraph 8.62). The requirement that a private body be performing a normally governmental function guards against the possibility that all 'command-and-control' regulation, which

21 The range of typical measures is summarised in Sawin, 'National Policy Instruments: Policy Lessons for the Advancement and Diffusion of Renewable Energy Technologies Around the World', Int'l Conference for Renewable Energies, Thematic Background Paper Series 2004, pp. 18-20. See also Beck/Martinot, 'Renewable Energy Policies and Barriers', in *Encyclopedia of Energy*, Cleveland ed. 2004, pp. 372-376.

22 Case C-379/98 – *PreussenElektra AG v. Schlesweg AG* [2001] ECR I-2099.

directs private bodies and which always has some distributive effect as between different private economic actors, could be deemed a subsidy.

We have already alluded to some of the complexities of ascertaining whether the subsidy has conferred a 'benefit' on the recipient, i.e. a competitive advantage over and against general 'market' conditions. Some programs for renewable energy may not confer a 'benefit' in this sense. Measures that merely defray the cost of businesses acquiring renewable energy systems or which compensate enterprises for providing renewable energy in remote locations, do not necessarily, for instance, confer a 'benefit' on the recipient enterprise. They simply reimburse or compensate the enterprise for taking some action that it would otherwise not take, and the enterprise has not acquired any competitive advantage over other enterprises, which do not take the subsidy but do not have to perform these actions either.

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

This brings us to the consideration of 'adverse effects'. Often subsidies for renewable energy and renewable energy technologies reflect the absence of alternative sources of supply for renewable energy and/or the technologies. In such cases, there may be no competing producers from other WTO Members who can claim to be injured, or suffer other adverse effects, from the subsidies in question. Where subsidies are paid to users of renewable energy or renewable energy technology, and where those users can benefit from the subsidy regardless of whether they acquire the energy or the technology from domestic or foreign sources, again here there may not be any 'adverse effects' on competing foreign producers.

Finally, we should mention the possibility that renewable energy subsidies could be challenged based on their 'adverse effects' not on competing renewables imports but on foreign non-renewable energy products. Here we note that, generally speaking,²³ the 'adverse effect' in question must be on a like product from another WTO Member. The meaning of likeness for purposes of the SCM Agreement has been addressed only once so far in

the jurisprudence, in the Indonesia-Autos case. In that case, the panel did not delineate very clearly the concept of 'like products', instead evoking a very broad notion that entails considering the kinds of factors that are at issue under Article III of the GATT as well perhaps as others, such as the way the industry had segmented itself. In Indonesia-Autos, the panel emphasised physical characteristics in its likeness analysis, but largely because, as it said, physical characteristics, in the case of automobiles, were closely linked to consumer relevant criteria such as brand loyalty, brand image/reputation and resale value (paragraphs 14.173-14.174.).

Where the harm alleged is 'serious prejudice' within the meaning of Article 6 of the SCM Agreement, the requirement to identify a 'like product' exists explicitly with respect to serious prejudice due to price undercutting, but not with respect to the other kinds of effects identified in 6.3.c, notably significant price suppression, price depression or lost sales. In the US-Cotton case, at footnote 453, the Appellate Body held that it did not have to decide the interpretative issue of whether a comparison with 'like' products should be nevertheless inferred in the case of significant price suppression, price depression or lost sales.

Related issues would arise if a WTO Member were to challenge renewables subsidies, claiming adverse effects on producers of non-renewable inputs such as fossil fuels. The complex set of considerations that determines price and supply of fossil fuels in domestic and world markets (including futures and derivatives trading, political events, and in the case of petroleum, cartel-like behavior), could make it very difficult to attribute the kinds of 'adverse effects' contemplated in Article 5 of the SCM Agreement to renewables subsidies. With respect to 'serious prejudice', the Appellate Body has held in US-Cotton 'it is necessary to ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies [footnote omitted]'(paragraph 437). The Appellate Body further observed: 'we underline the responsibility of panels in gathering and analysing relevant factual data and information in assessing claims under Article 6.3(c) in order to arrive at reasoned conclusions'(paragraph 458).

Some renewables subsidies (e.g. biofuels subsidies) may raise issues concerning the application and interpretation of the provisions of the WTO Agreement on Agriculture, which contains inde-

23 But see the discussion of 'serious prejudice' in the following paragraph.

pendent disciplines on domestic support measures for agriculture. The Agreement on Agriculture explicitly exempts certain environmental and conservation subsidies from the requirement to reduce domestic support (Annex II, Paragraph 12); if a measure falls within these provisions, the Agreement on Agriculture permits its retention at current levels.²⁴ At the same time the Agreement on Agriculture Article 13b (the 'peace clause') provides immunity from suit under the SCM Agreement for such subsidies, but only during the 'implementation' period, i.e. before January 1, 2004. The 'peace clause' has now expired and no agreement has been reached between WTO Members on its revival.

V. The General Agreement on Trade in Services (GATS)

As already noted, the conventional view is that, when traded across borders, electrical energy is a 'good'. This view arose when trade in electricity consisted in bulk power contracts between integrated national monopolies. With demonopolisation and regulatory reform occurring in the electrical energy sector in many countries, and the functions of former integrated monopolies now being performed by discrete generation, distribution, grid management and retailing enterprises, the nature and structure of electricity trade is changing; it is plausible to view these various discrete entities as providers of services of various kinds such that what are being traded across borders are these services, rather than electricity as a good. Where renewable energy obligations are being imposed on grid operators or retailers, for example, it may be appropriate to consider these obligations under the GATS rather than the GATT. Adding to the uncertainty, the Appellate Body has found overlap between the two treaties such that the same measure could be disciplined in different aspects by both GATT and GATS (EC-Bananas).

The scope and structure of GATS obligations is significantly different than in the case of the GATT. The Agreement applies to measures affecting trade in services, defined as the supply of services by the service suppliers of one WTO Member to the consumers of another WTO Member, through any of four 'modes' of delivery. Mode 1 refers to a situation where neither the supplier nor the buyer of the service crosses the border in order to effect the trans-

action: supply of electricity across the border, to the extent that this is a service (see above), falls within mode 1 in many cases. Mode 2 entails the consumer going to the jurisdiction of the supplier in order to consume the services (e.g. tourism). Mode 3 involves the supplier establishing a commercial presence in the jurisdiction where the consumers of the service reside (and this mode may have important implications for the energy sector as well as mode 1). Mode 4 involves the entry of personnel of the service supplier into the jurisdiction where the consumers reside in order to deliver the service.

There are some general obligations in the GATS that apply to all services supplied from one WTO Member's providers to consumers of another Member in any of these modes of delivery, including Most Favored Nation treatment and transparency. However, many of the most important obligations apply only in respect of sectors where individual WTO Members have made commitments in their 'schedules', and this includes National Treatment (Article XVII) and the GATS equivalent (roughly speaking) of GATT Article XI (Quantitative Restrictions), namely GATS Article XVI (Market Access) and Article VI (Domestic Regulation – very roughly equivalent to the TBT in respect of goods). Further complicating the structure of obligations in GATS is the possibility for WTO Members to use their 'schedules' to limit or qualify obligations such as National Treatment in scheduled sectors, and these limitations may apply across the board, or to only one particular mode of delivery for a particular service sector.

It will be appreciated that when the GATS was being negotiated in the late 80s and early 90s, demonopolisation of electricity utilities and unbundling of functions had barely begun. In the circumstances, it is understandable that there were few specific commitments that bear upon the services entailed in the provision of electricity.²⁵ Moreover, as Zarilli notes, there is no clear and precise classification that would facilitate the scheduling of specific commitments on energy services in GATS:

24 The treatment of US biofuels subsidies under the WTO Agreement on Agriculture is the subject of an excellent in-depth analysis by Dana, 'WTO Legal Impacts on Commodity Subsidies: Green Box Opportunities in the Farm Bill for Farm Income Through the Conservation and Clean Energy Development Programs', *Envtl. Law & Pol'y Ctr.* 2004.

25 'Chapter Eleven: Energy Services', in WTO Secretariat, *Guide to the GATS: An Overview of Issues for Further Liberalization of Trade in Services*, 2001, pp. 259-294.

‘The WTO „Services Sectoral Classification List“ (document MTN-GNS/W/120) does not include a separate comprehensive entry for energy services. The United Nations Provisional Central Product Classification (UNCPC) also does not list energy services as a separate category.²⁶ As she goes on to observe, Annex 1 in the CPC does provide a list of energy related services that might fall under various classifications, ranging from consulting to construction to transportation services, and there are a few energy related sub-classifications in the WTO scheduling document. Interpreting whether an activity that is not explicitly scheduled is nevertheless included within a classification or sub-classification in a Member’s schedule is a complex exercise, which may include resort to materials such as negotiating history; see the US-Gambling Appellate Body report.

Trade in financial services

Where instead of actual energy or services ancillary to the production and distribution of energy, it is renewable energy certificates that are being traded, the WTO instruments on trade in financial services arguably apply. Of course, this is a less than surgical distinction because while these instruments can be traded as an economic activity unrelated to the actual purchase and sale of energy itself, they are often a means by which sellers and buyers of energy and their intermediaries manage trade in energy itself. What seems fairly clear is that trade in renewable energy certificates would fall within the ambit of the WTO instruments on financial services. These certificates do not entail an entitlement to energy, but rather an entitlement to be relieved of an obligation to purchase renewable energy that would otherwise fall on the bearer of the certificate, because the issuer of the certificate, who may be in another jurisdiction, is prepared to bear that burden. It should be noted that the characterisation of renewable energy certificates as a service does not depend in any way on whether the energy itself is regarded as a good or a service. (Thus, commodity

futures (pork bellies, for example) are a financial service, despite the fact that the underlying transaction is a goods not a services transaction.)

WTO Members have made financial services commitments in the Uruguay Round negotiations and in subsequent negotiations dedicated to financial services which concluded in 1997/1998, and in a number of cases these commitments have been made in the context of adhesion to the Understanding on Commitments in Financial Services. This understanding includes a National Treatment obligation, a requirement of market access through cross-border trade and commercial presence, and various related provisions on entry of personnel, and various exceptions or limitations. There is a best efforts commitment also to eliminate non-discriminatory regulations that have significant adverse impacts on the trade of other WTO Members.

An important question is whether tradable renewable energy certificates fall under any of the existing classifications under which WTO Members have made commitments in the financial services negotiations or whether they constitute within the meaning of the Understanding a ‘new financial service’. (Article 7 of the Understanding requires that ‘A Member shall permit financial service suppliers of any other Member established in its territory to offer in its territory any new financial service.’) Possibly relevant classifications include ‘derivative products incl., but not limited to, futures and options’ and ‘- other negotiable instruments and financial assets, incl. bullion.’

The nature of its financial services commitments may well affect a State’s ability to confine a tradeable certificate program to within its national borders. Since the unconditional MFN obligation in GATS applies to financial service measures (unless within four months of the entry into force of GATS a WTO Member has lodged an MFN reservation with respect to the particular measure in question – GATS Second Financial Services Annex), questions could arise where a WTO Member’s authorities recognise certificates issued by some other WTO Members’ nationals and not those of other WTO Members, or where a Member seeks to operate an international certificate trading scheme based on reciprocal or mutual recognition. However, based on the GATT jurisprudence, it is likely that distinctions of this kind could be drawn where they are based on genuine origin-neutral criteria such as the

26 Zarilli, ‘International Trade in Energy Services and the Developing Countries’, in UNCTAD, *Energy and Environmental Services: Negotiating Objectives and Development Priorities*, 2003, p. 46.

authenticity of the certificate, the environmental practices of the issuer, the method of generation and so forth (Canada-Autos, report of the panel).

It is possible that certain subsidies to renewable energy generation in a particular jurisdiction could, in certain instances, result in a lower cost to providers of renewable energy certificates in that jurisdiction, in as much as the cost of generating the renewable energy attested to by the certificate is lower for the certificate issuer than it would be in a market where renewables generation is not subsidised. In this respect, it is crucial to note that there are no existing disciplines on subsidisation of services in the WTO; future disciplines are the subject of current negotiations pursuant to GATS Article XV).

VI. The Government Procurement Agreement (GPA)

The WTO Government Procurement Agreement (GPA) is a plurilateral agreement to which only a sub-set of WTO Members (27 in all) have bound themselves. The United States is a signatory, and the Agreement applies to sub-national procurement in the case of 37 US States; the Administration has sought to persuade other States that it should include their procurement in bindings under the WTO GPA (as well as regional agreements). Unlike most multilateral WTO Agreements the GPA has a provision for individual States taking reservations from the general obligations of the GPA, whereby various Member States have specified limitations on their commitments under the Agreement.

The GPA includes a National Treatment obligation with respect to goods and services, as well as service suppliers (contractors). The differences between renewable and non-renewable energy that make these 'unlike' products, which were discussed in the case of the National Treatment obligation in GATT apply also with respect to procurement. Contrary to some readings, the GPA does not require that a government award contracts to the lowest bidder for performing a given function (here the provision of energy) without regard to considerations such as environmental, national security or other public goods. The GPA does contain an obligation that 'any conditions for participation in tendering procedures shall be limited to those which

are essential to ensure the firm's capability to fulfill the contract in question.' (Article VIII(b)). This is however largely a due process and transparency requirement; once a government has set out the conditions of the contract itself, it must open the bidding process to all suppliers who have capability to fulfill those conditions. The provision says nothing about what factors may enter into defining the conditions of the contract in the first place. In sum, the GPA provides governments at both the federal level and below ample room to give preference to renewable generation in their energy purchases, even if such energy must be purchased at a higher price than from conventional generating sources. In any case, there are exceptions in the GPA that relate to, inter alia, measures necessary 'to protect human, animal and plant life or health' and measures necessary for certain types of national interests (albeit defined rather narrowly so as to mostly apply to defense related procurement activities). The former exception with respect to 'human, animal and plant life or health' would certainly cover environmentally-motivated preferences for renewables, given the environmental harms and risks associated with conventional methods of generation. The kind of evidence or proof that would be required to show that measures are 'necessary' under similar exceptions in Article XX of the GATT (discussed above) would likely apply here as well.

The GPA also contains an obligation that procurement technical specifications not constitute unnecessary obstacles to trade, tracking closely the language in the TBT Agreement, discussed above. According to at least one NGO, this language means 'Translated from the trade jargon, this provisions means that specifications based on how a good is made (for instance, requiring recycled content in paper or other goods to be procured) or how a service is provided (for instance, requiring a portion of energy be purchased from renewable sources) are prohibited.' (Public Citizen, Global Trade Watch, November 1, 2004). This interpretation of the GPA does not appear to be justified; technical specifications are permissible where 'necessary', i.e. to achieve the policy goals of the government in respect of the contract. It is only in cases where the goals can be fully achieved with less trade restrictive impact than that of a given regulation, that the regulation may run afoul of these provisions of the GPA.

VII. Opportunities to challenge barriers to renewable energy under WTO law

1. Access to the grid and distribution and transmission networks

To the extent that electrical energy is a good, the terms under which imported energy is afforded access to the national grid and distribution and transmission networks is governed by the TBT Agreement as well various provisions of the GATT, including in some instances Article XVII, 'State Trading Enterprises'. These terms could be unfavorable to either foreign producers of renewable energy and/or producers of renewable energy technology. As already discussed, the TBT Agreement requires that technical regulations not constitute an unnecessary obstacle to trade. Even where privatisation and restructuring have occurred, many electricity market operators and or 'wires' companies may fall within the definition of State trading enterprises, because they are granted 'exclusive or special privileges'. Such enterprises are required under Article XVII of the GATT to make purchases and sales in accordance with commercial considerations, and this obviously includes pricing; pricing or other purchasing practices of the market operator that, for example, take into account 'stranded assets' of domestic fossil fuel or nuclear generating operations might be subject to challenge under this provision of Article XVII. Moreover, a State trading enterprise is required to afford the enterprises of other Members, in accordance with customary business practice, 'adequate opportunity' to compete for purchases and sales.

Clearly, some technical regulations that create obstacles to trade in renewable energy or renewable technologies are necessary for legitimate objectives. For example, limits on the siting of wind turbines may well be motivated by legitimate concerns about the risks to wildlife, especially birds and bats. Other regulations may be designed intentionally or may be inadvertently based on the traditional predominance of fossil fuel or nuclear generation, and the dominance of industry representatives from those sectors in the regulation and standard-

setting process. Imbalance penalties that do not take into account that the intermittency of renewable energy may be offset by other distinctive contributions to the stability of the overall system are an example.

2. Biofuels: Regulations on transport and vehicle standards and specifications

There may be instances where biofuels or substances that compose biofuels receive regulatory treatment based upon assumptions that they are being traded as waste or for use in functions other than the production of renewable energy that may make the substances more hazardous. The TBT Agreement in addition to the requirement that technical regulations not be 'unnecessary obstacles' to trade contains a provision that requires that 'Wherever appropriate, Members shall specify technical regulations based on product requirements in terms of performance rather than design or descriptive characteristics.' (TBT 2.8). This provision implies that technical regulations should not treat materials (such as for example sawmill by products, a potential issue in the EU) based upon the notion that such materials will be used in such a way as to cause a given environmental or other social harm, when their actual use, i.e. as fuels or components in renewables generation, does not give rise to the harms in question.

3. Subsidies

Subsidies for oil, coal gas and nuclear power are often cited as a very significant barrier to renewable energy.²⁷ Many of these subsidies could fall into the „actionable“ category, depending on their exact characteristics, which would have to be analysed on the basis the framework in the WTO SCM Agreement sketched above. As a general matter, one may question whether WTO litigation will be a realistic option to challenge such subsidies – governments might be reluctant to deploy legal arguments that could result in challenges to their own support programs. Nevertheless, at least with respect to export subsidies, this consideration did not, for example, inhibit Canada from initiating a chain of WTO cases where Canada and Brazil challenged each others measures on civil aircraft.

²⁷ Pershing/Mackenzie, 'Removing Subsidies: Leveling the Playing Field for Renewable Energy Technologies', Int'l Conference for Renewable Energies, Thematic Background Paper Series 2004.

Perhaps inspired to some extent by initiatives on fisheries subsidies, a more promising approach would be to attempt to have negotiations within the WTO with a view to Members agreeing to cap and reduce subsidies that are environmentally-unfriendly in the energy sector. Such negotiations might also address themselves to the task of identifying a set of 'green box' renewable energy subsidies that Members agree to refrain from challenging, on account of consensus as to their positive environmental effects. A broader and much more speculative question is whether such negotiations could be linked to the fulfillment of commitments under international environmental regimes.

4. Services

To the extent that services provision is at issue and not just trade in goods, barriers to access to the grid, and transmission and distribution networks could be challenged where these affect the trading opportunities of service providers from other WTO Members. Assuming that the WTO Member being challenged has made commitments on the relevant energy services (and it will be recalled that few such commitments have been made to date), depending on the nature of the barrier either the

National Treatment or Market Access provisions of GATS or both may be applicable. The explicit language of the National Treatment obligation in GATS indicates that it covers de facto as well as de jure discrimination (and see EC-Bananas). In addition the disciplines on domestic regulation in Article VI of the GATS may be applicable: these disciplines envisage negotiations concerning regulatory barriers not caught by other GATS provisions on a sector-by-sector basis; in the interim, domestic regulations in sectors that are the subject of specific commitments must be based on objective and transparent criteria, not more burdensome than necessary to ensure the quality of the service; and in the case of licensing procedures, not in themselves a restriction on the supply of the service.

Given the lack of explicit commitments on energy services in the Uruguay Round, and the changes in the structure of electricity systems and technological developments negotiations on energy services in the current Doha Round may present an opportunity to ensure that the commitments made reduce barriers to renewable energy. The same goes for financial services negotiations in the current round, in respect of the status and treatment of tradeable renewable energy certificates in the future.