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WTO Disciplines and Biofuels: Opportunities and Constraints in the Creation of a Global Marketplace

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EXECUTIVE SUMMARY*

This paper is an abridged version of “WTO Disciplines and Biofuels: Opportunities and Constraints in the Creation of a Global Marketplace,” issued by the International Food & Agricultural Trade Policy Council (IPC) and Renewable Energy and International Law (REIL) in October, 2006. That paper provides an in depth legal examination of how the rules of the World Trade Organization (WTO) might apply to the biofuels sector, and sets forth a range of WTO issues that could usefully be clarified.

We emphasize “might” apply, because this is a topic that has not yet been addressed in great detail and our examination should therefore be viewed as an exploratory one. The fact that biofuels are not classified in a uniform fashion, plus their unusual make-up – a fuel produced through the transformation of agricultural feedstocks – makes examining biofuels and trade regulations a rather complex undertaking. As often happens when existing rules have to be applied to technologies that did not figure prominently when the rules were written, a debate needs to occur on how the rules apply to this technology and how or whether the rules need to be clarified or even changed.

This abridged version distills the key analyses, findings, and conclusions for an audience less concerned with the details of WTO trade law. Those seeking additional background, further examples, or substantiation for the legal arguments are encouraged to refer back to the original paper.¹

Overview and Background on Biofuels and International Trade

Enthusiasm for biofuels as an alternative to fossil fuel has emerged from many corners. Governments and interest groups, with causes as varied as national security, the environment, rural development, and poverty alleviation, have looked to this alternative energy source to address their concerns. However, biofuels’ contribution to the world energy supply today is miniscule; in order for this alternative technology to address the above issues, production would have to scale up considerably and favorable conditions for robust international trade in biofuels would be needed.

Producing fuel from agricultural crops has already raised questions about the impacts on the supply of food and land. What has received less attention is the shift that would result in the location of feedstock and fuel production. Energy demand and land productivity are somewhat asymmetrical. OECD countries, which import most of their fossil fuel, consume more than 49 million barrels of oil a day. While their demand for biofuels is therefore rising, the same industrialized countries do not have sufficient land availability to entirely meet that demand with domestic production; even if they could, this would not necessarily constitute the most cost-efficient or environmentally sustainable approach. The most ideal land for sugarcane and oil palm trees, currently the most energy efficient biofuels feedstocks, is primarily located in developing countries, and mostly in tropical and sub-tropical climates. In addition to having land more suitable to efficient biofuels feedstocks, these countries also have longer growing seasons and lower labor costs than OECD countries.

Many developing countries are showing interest – or are already establishing programs – to develop local feedstocks and local production of biofuels, and the technology has been pointed to as a possible development tool for poor countries. Domestic production and use can – as in developed countries - lead to increased markets for agricultural commodities and aid rural development efforts and incur savings through reduced expenditures on imported fossil fuel, which make up a significant part of developing countries’ budgetary

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outlays. Most developing countries are, however, not in a position to provide anywhere near the government support that the industry enjoys in developed countries and will need to rely heavily on private investment to foster the establishment of a biofuels industry. A transparent and global trading regime can serve to attract stable financing and investment capital.

Even though some developing countries may have a comparative advantage in the production of biofuels or biofuel feedstock, potential trade may be stifled by the OECD countries' overly exclusive focus on domestic production, prompted by their desire to provide additional outlets for their agricultural producers. Under these circumstances, biofuels will continue to be produced from feedstocks that may not necessarily be cost-effective, and/or fare relatively poorly on a net-energy or sustainability basis. There is currently a strong vested interest in annual broadcrops, such as corn and rapeseed, particularly in the U.S. and EU, despite the fact that the energy cost of production of the feedstock crop per hectare/per annum is significantly higher with annual crops than with perennial plantations of feedstock crops such as palm oil or jatropha. International trade in biofuels would enhance efficiency by directing production to the most cost-effective locations, and use of the highest yielding and lowest cost feedstocks.

Additionally, so-called "next generation biofuels" produced from cellulosic materials are held out as the most promising in terms of net energy balance and environmental sustainability. To the extent that the biofuels industry will require and receive continuing government support measures, it is vital that they incur the least distortion of market signals and choices and thus allow the most cost efficient and environmentally sound biofuels to thrive in the market place.

To date, the asymmetry between energy demand and land productivity has not mattered greatly, as the consumption of biofuels has been insignificant compared to fossil fuels. Most countries have been able to supply their markets with domestically produced biofuels; importing biofuels for transportation use has been minimal. However, as demand increases and as developing countries identify a market in which they may have a comparative advantage, international trade in biofuels may become more commonplace. While developing countries thus arguably have a comparative advantage, there are also concerns that increased production of feedstocks and biofuels in these countries might contribute to increased food insecurity and prove environmentally disruptive, e.g., because the cultivation of biofuel feedstocks might lead to deforestation. Toward this end, sustainability criteria are being considered by some governments and nongovernmental organizations. To work, such sustainability criteria would need broad international support and to be designed so as not to create unfair trade barriers.

Governmental support for the biofuels sector has come in many forms, ranging from the voluntary directives of the supra-national European Union, through the national and sub-national level. WTO obligations are relevant for many of these; some examples include:

- Fuel excise tax exemptions and rebates, full or partial;
- Mandates for the production of specified levels of biofuels;
- Mandates for compulsory blending with fossil fuels to a certain percentage by federal and subnational entities;
- Government-procurement preferences and purchase mandates;
- Local, state/provincial and federal fleet requirements specifying some level of required or subsidized usage of biofuels in the relevant government fleets.
- Environmental legislation mandating certain specific types of fuel additives (typically for fuel oxygenation) related to reducing vehicle exhausts. This has resulted in higher demand for ethanol either as a blending agent or for manufacture into ETBE as a substitute for the more environmentally hazardous MTBE;

- Subsidies not normally associated directly with biofuels, such as agricultural farm supports in the U.S., EU and elsewhere; and
- Government supported R&D for biofuels ranging from basic research to technology demonstration plants.

As is clear from the above discussion, for myriad reasons, a look at how WTO rules might apply to the biofuels sector is to be recommended, both for countries that are providing significant amounts of support to their bio-fuel industries and countries that would be interested in exporting bio-fuels. Even if such trade does not materialize soon, such an examination of WTO rules is timely, given uncertainties about subsidy notification requirements and the increase in biofuels byproducts. In the pages that follow, this paper sets forth a range of WTO issues that could usefully be clarified in a debate on how international trade rules apply to the biofuels sector as such. These include:

- How should bio-fuels be classified for tariff treatment and other purposes – are they agricultural, industrial or environmental goods, and what are the implications of each for WTO members' obligations? What are the options for reaching a more uniform classification and for possible trade liberalization?
- How should subsidies to promote the production or consumption of biofuels be considered from the perspective of existing or any planned WTO rules? How should possible “cross-subsidization” (the increase in by-products as a result of subsidies to biofuel production or consumption) be evaluated?
- What is the consistency of domestic regulations and standards—for example, mandates requiring the use of biofuels, fuel content requirements, or environmental sustainability import criteria—with WTO rules on regulations and technical barriers to trade? How do WTO government procurement rules apply to biofuels preferences and mandates in public procurement?

Rules of the World Trade Organization Relevant to the Biofuels Industry

Classification of Goods and WTO Law

Background on Tariff Classifications

A major function of the WTO is to provide a framework for its Members to negotiate reductions of tariffs on goods. Members express their commitments through a schedule of “bound” tariff rates, by which they are legally bound not to impose higher tariffs for any other WTO Member. Tariffs are set by categories of products, since not every single product could possibly be listed in a Member’s schedule, and the rates can vary widely from one category to another. Therefore, which category a product falls within can significantly affect its tariff treatment.

The WTO leaves to its Members’ discretion how to categorize their products. However, since the vast majority of WTO Members are also Members of the World Customs Organization (WCO), through which they are bound by treaty to use a system of classifications known as the Harmonized Commodity Description and Coding System, or “HS” for short, WTO negotiations employ the HS tariff classification system.² The HS system classifies products at a fairly general level, known as the “six digit” level.

WTO Members are free to develop more detailed product subcategories below the six digit level, and to set different “applied” tariffs for them, provided that 1) those tariff rates remain lower than the bound rate at the six digit level; 2) the lower rates are offered on an unconditional “most favored nation” (MFN) basis to all other WTO Members; and 3) the same lower rates are offered to “like products”. Whether two products are “like” is a matter of often very complicated legal analysis.

Classification and Tariff Treatment of Biofuels

Biofuels and their feedstocks present the following tariff classification issues, among others, in the WTO:

- How to classify the fuels themselves, and whether to classify them and their feedstocks as agricultural goods or industrial goods. E.g., should feedstock materials (such as maize or palm oil) be given different tariff classifications, and thus potentially different tariff treatment, based on whether they are intended for use in biofuels or in the food industry?
- Whether to treat biofuels as environmental goods, for purposes of the WTO Doha Round’s mandate to liberalize trade in environmental goods and services.

The current system for classifying biofuels is unclear and allows for inconsistent treatment of similar, sometimes interchangeable biofuels products, yet addressing these problems presents several challenges.

Generally speaking, biofuels have been classified according to whether they are considered agricultural or chemical products and not according to their use as fuels. An exception is biodiesel, which now has its own HS classification. A more typical example is ethanol, which is classified in the HS according to whether it is undenatured (HS 220710) or denatured (HS 220720), with no separate classification or subclassification for fuel ethanol.

Since HS classifications are, as noted above, the basis for tariff bindings in WTO Members’ schedules, the lack of HS classifications more precisely targeted at a substance’s fuel use not only makes it difficult to get precise biofuel trade flow statistics, but may also impede efforts to liberalize tariffs on biofuels. WTO Members may have environmental and energy security reasons for wanting to reduce tariffs on these substances when used as fuels but not when they are destined for other uses in competition with domestic products.

HS classifications also importantly determine whether or not a product is an agricultural product under WTO rules, a distinction with significant implications regarding tariff rules and the treatment of subsidies (discussed below). The WTO Agreement on Agriculture (AoA) applies to HS Chapters 1 to 24 (except for fish products) as well as to a specified list of products with other HS headings. While ethanol, in HS Chapter 22, is considered an agricultural good, biodiesel falls under Chapter 38 and is thus considered an industrial good.

Further complicating the classification issue is the possibility (to the extent that the Doha Development Round may be revived) that some biofuels could be deemed as “environmental goods” and subject to special negotiations under the Doha mandate to reduce or eliminate tariffs and trade barriers for “Environmental Goods and Services” (EGS).³ In the parties’ still unresolved debates over the definition of “environmental goods”, Brazil and India have suggested negotiations on EGS should include biofuels; the EC’s position is similar. Some WTO Members, including the US, on the other hand, have argued that only products subject to non-agricultural market access (NAMA) negotiations could be included in the EGS negotiations, thus excluding agricultural products. (But note that the US has also omitted from its proposal biodiesel, although it is not an agricultural product under the HS.)

Concerns are sometimes raised about the difficulty customs officers would face in administering a biofuels classification system that is in part end-use based (i.e., whether intended for use for fuel or not), since in some instances there would be no obvious way to distinguish through physical inspection between covered and non-covered substances. However, most states already impose myriad requirements on imported goods—technical, health and safety, environmental, etc.—for which compliance cannot be determined by a simple physical inspection of goods coming across the border. In most instances, officials must rely on certification either by the exporter or importer themselves or by some independent testing and certification institution in the country of export or some third country, backed up by random sampling, spot checks, post-entry surveillance and similar techniques.

Potential Policy Responses to Classification Issues

There are a number of possible multilateral, plurilateral and unilateral policy responses to the biofuels classification issues.

Amendment of the Harmonized System of Tariffs

The most obvious or straightforward approach would be to introduce distinctive HS headings for biofuels, i.e. headings based both on the chemical and biological composition of the substance and on its use as fuel. In this respect, the WCO's HS classification of biodiesel provides an obvious precedent, containing a chemical description ("mixture of mono-akyl esters..."), a process characteristic ("derived from vegetable oils or animal fats") and an end-use criterion ("...fuel for diesel engines").⁴

Amendment of the Harmonized System is, however, a complex process which could take many years, since the WCO's Council generally considers amendments in four-year cycles, with amendments under the next review cycle not scheduled to be implemented until 2012.⁵

Once the WCO arrived at particular HS classifications for biofuels (whether under agricultural or non agricultural HS headings), it would still be up to WTO Members to decide, as a policy matter, whether all or some of these fuels should be considered to fall within the scope of the WTO Agreement on Agriculture and to amend Annex 1 of the Agreement on Agriculture to reflect the preferred solution.⁶

Negotiated Agreement in the WTO

In theory, WTO Members could negotiate the liberalization of tariffs on biofuels in a way that circumvented the HS classification problems. A precedent is the 1996 WTO Information Technology Agreement, where Members committed to liberalize tariffs for two lists of products: an "A" list, based on HS classifications, and a "B" list, describing specific products, regardless of how those products might fit within existing HS classifications. Similarly, WTO Members or some subset of them could agree to limit tariffs on biofuels or allow them entry tariff free regardless of the existing HS classification and existing domestic nomenclature. Such an agreement would not need to be negotiated within the existing Doha negotiating committees for NAMA, agricultural goods, or EGS; with enough political will a sui generis negotiation could be launched by a decision of the WTO Ministerial Council.

Environmental aspects of biofuels. It would probably be a mistake to link multilateral biofuel trade liberalization to a specific set of environmental goals, in light of the controversy over the definition of "environmental good" in the EGS negotiations and the divisions among environmentalists themselves on whether particular

biofuels are an overall positive for the environment,⁷ The WTO is not a desirable forum for resolving such complexities. Instead, individual WTO Members, or indeed any sub-set of WTO Members (for example, pursuant to obligations under environmental treaties) are free to impose sustainability requirements on domestic and imported biofuels, provided they did so in a non-discriminatory manner. (See discussion of domestic regulations below.)

Unilateral Options

An individual WTO Member could unilaterally lower tariffs on biofuels, as a matter of its own energy and environmental policy, as long as it provided MFN treatment to “like products.” Doing so would encourage domestic consumption of biofuels, while protecting domestic non-fuel products by retaining the higher tariffs on non-fuel products subject to the same HS classification as the biofuels. The WTO Member could do this through introducing a further sub-classification in its domestic nomenclature.

WTO jurisprudence suggests that biofuels and physically similar products with non-fuel uses should not be considered “like” products, as they are not competing in the same consumer marketplace. Whether a WTO Member could make tariff distinctions among biofuels products based on their environmental impacts (e.g., over the product’s lifecycle), is less clear.

Treatment of Biofuels under Tariff Preference Programs

Yet another option for addressing biofuels tariff treatment is through certain preferential trading arrangements, under which a developed country admits products from developing countries at rates lower than its bound rate for those products. These exceptions to MFN treatment are authorized by the WTO through a system of waivers (for specific subsets of developing countries) or as part of the Generalized System of Preferences (GSP). EC preferences extended to the group of African, Caribbean and Pacific (ACP) countries, for example, provide duty free treatment of biofuels imports, as do the US preferences under its Caribbean Basin Initiative (CBI). At present, under the US GSP biofuels do not qualify for preferential treatment (ethanol was explicitly withdrawn from the US GSP in the 1980s) but the preferences are granted to biofuels under the enhanced EC GSP scheme, as well as the EC’s “Everything but Arms” scheme.

WTO jurisprudence suggests that, under certain circumstances, a developed country could treat different developing countries differently as part of a GSP scheme, so long as the differences in treatment addressed in a positive manner the development needs of the countries in question, and were based on objective and transparent criteria applied with due process.

Subsidies and WTO Law

Government subsidization has been crucial to the economic viability of the biofuels industry since its inception. Determining these instruments’ consistency with international trade rules often requires a complex and fact-specific analysis.

Background on Biofuels Subsidization

Due to the immature states of the technologies involved, and the often high cost of the relevant feedstocks, the biofuels industry throughout the world has had to rely on subsidies and other public support to grow. Brazil’s ethanol industry enjoyed significant government subsidies during its first twenty years, commencing in 1975 after the inception of the first oil crisis. The Brazilian National Ethanol Program (Proalcool) included the

building of a national distribution infrastructure for ethanol, low-interest loans to sugar companies for distillery construction, a mandatory blend of 20%⁸ ethanol with all gasoline sold and subsidies at the fuel pump to ensure that ethanol blended fuels – and later all ethanol fuels – remained competitive with, or cheaper than, 100% gasoline at the retail pump. An industry shakeout followed the government's discontinuation in the 1990s of the traditional subsidy programs (aside from subsidized prices at the fuel pump), but the ethanol industry managed to survive. In the United States, federal government support for ethanol became established during the time of the second oil shock in the late 1970s, when price and energy security concerns were high⁹, first with provisions in the Energy Security Act of 1978 providing for a \$.40/gallon exemption on the federal motor fuels tax (currently \$.51/gallon through 2010) and followed by the Energy Tax Act of 1980, which offered insured loans to small (under 1,000,000/gallon/annum) producers of ethanol (the original measures in these acts and others were extended in the decades since).¹⁰ Over time other measures have been added, such as federal DOE funding for research in renewable fuels, usage mandates etc. In the EU, several member states have put mandatory targets into place and provide for tax incentives; a further example of support for biofuels is the energy crop premium the EU provides to its farmers in addition to their single farm payments.¹¹

Subsidization can have multiple purposes and these purposes may vary in their consistency with the underlying norms of world trade law. A government may, for environmental or energy security reasons, subsidize consumers so as to provide them with an incentive to switch from conventional fuel to biofuel (in whole or part) by compensating, or more than compensating, for the added cost. Or it may attempt to achieve the same objective by subsidizing research and development that can lead to more efficient technologies for the production of biofuels. Neither of these kinds of subsidies need affect the relative competitive position of domestic and foreign producers (assuming the knowledge generated by subsidized R & D is not largely proprietary to domestic firms and leads to generalized innovation that foreign producers can also exploit — an assumption that is difficult to substantiate). On the other hand, a government may subsidize the domestic production of biofuels; this may not be a cost-efficient way of providing an incentive for consumers to switch from fossil fuels to biofuels, since the lowest-cost, most efficient producers of the biofuels in question may be foreign producers. Such subsidies are sometimes justified, as a policy matter, on “infant industry” grounds.

WTO Law Regarding Subsidies

Several components of the WTO Agreements address subsidies, including the GATT itself, the Agreement on Subsidies and Countervailing Measures (the SCM Agreement) and the Agreement on Agriculture (the AoA). As with tariff classifications (see Section A above), the way in which a biofuel is classified importantly determines whether one or both sets of WTO disciplines on domestic subsidies are applicable.

The General Agreement on Tariffs and Trade (GATT)

Under the GATT, subsidies and taxes are, like other domestic measures, subject to such disciplines as National Treatment, requiring comparable treatment of domestic and foreign producers.

More specifically, the GATT itself exempts from the National Treatment obligations the “payment of subsidies exclusively to domestic producers”. Note that payments to users or consumers, however, would still be subject to National Treatment.

The SCM Agreement

The Subsidies and Countervailing Measures (SCM) Agreement prohibits outright two kinds of subsidies: export subsidies and subsidies contingent upon the use of domestic products over imported products. Biofuels subsidies are generally not tied to export performance and therefore would not fall into this first category of

prohibited subsidies. However, production subsidies contingent upon the use of domestic products, such as locally produced feedstock crops, are an issue in the biofuels area.

The SCM Agreement authorizes a WTO Member adversely affected by other kinds of subsidies either to bring a WTO dispute settlement challenge or to unilaterally impose “countervailing measures,” provided certain criteria are met. These criteria include:

- that the subsidy entail a “financial contribution” by the subsidizing government and a “benefit” to the recipient, where the “benefit” confers a competitive advantage on the recipient;
- that the subsidy be “specific” to particular industries or firms; and
- that the subsidy causes certain “adverse effects” on competitors.

In other words, a WTO member government wishing to provide WTO-consistent biofuels subsidies should avoid those that would meet the “actionability” criteria.

The SCM Agreement and WTO case law provide further guidance on these criteria. “Financial contribution” 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”.

Determining whether a subsidy confers a competitive advantage “benefit” calls for comparison to a benchmark of market conditions that would exist in the absence of the government intervention (i.e., the subsidy). Correctly identifying a “benefit” and whether it exists can be a complex matter in situations where the market conditions themselves have been so influenced by government intervention as to render a meaningful “market” benchmark for “benefit” elusive. This may well be the case with biofuels, where a variety of government interventions in all the major producer nations have pervasively shaped the market.

For a subsidy to be “specific”, it must be targeted to some specific or limited class of users. A subsidy that does not single out certain industries or firms can, however, still be “specific” if a limited subset of industries or firms is the predominant or disproportionate user of the subsidy.

“Adverse effects” include injury to the importing country’s domestic producers of a like product in competition with the imported subsidized product; nullification or impairment of GATT benefits (in particular, tariff concessions); or serious prejudice to the interests of another Member. “Serious prejudice” is defined to include such effects as displacing imports of a “like” product into the market of the subsidizing Member or displacing exports of the complaining Member to a third country market; significantly suppressing or undercutting prices in the same market with respect to like products; or increasing the world market share of the subsidizing Member in a particular subsidized primary product or commodity.

An additional issue that may be important in the biofuels context is that of upstream and downstream subsidies. One firm or industry may receive the financial contribution but it is the benefit that flows to an upstream or downstream industry that is the source of concern. For example, a subsidy paid to domestic feedstock producers might be challenged by foreign producers of biofuels on the grounds that the subsidy results in a lower price of feedstock to domestic producers of biofuels.

The Agreement on Agriculture

WTO rules for agricultural subsidies are of particular relevance to biofuels and their feedstocks. If a given

biofuel or feedstock falls within the HS classifications listed in Annex 1 of the Agreement on Agriculture, the rules of that Agreement will apply in addition to those of the SCM Agreement.

The Agreement on Agriculture addresses agricultural subsidies by committing WTO members to adhere to limits on their overall annual trade distorting support for agriculture, and to reduce their support by a set percentage from a baseline amount that varies by WTO Member. (These are called “amber box” subsidies.) Not counted against those limits are certain kinds of non- or minimally trade distorting subsidies for public policy purposes, such as for research and development, or for environmental programs (the “green box” subsidies, discussed further below).

Amber Box Subsidies. There is considerable uncertainty as to whether individual WTO Members are actually operating their agricultural support programs within these aggregate amber box ceilings. In the case of biofuels there is particular uncertainty: Many biofuels programs are structured as support to the biofuels industry, rather than as support for individual agricultural products that fall under the AoA. However, given that these latter programs nevertheless, at least in part,¹² confer support to such agricultural products, they may still belong in the amber box. The stakes are considerable, for if a large number of these measures were considered to be “amber box,” the aggregate ceilings to which Members have agreed to might well be exceeded in certain cases, included the ceilings of the US and the EC.

Green Box Subsidies. It is worth examining the extent to which biofuels subsidies qualify – or could be structured to qualify – for the “green box”.

To qualify for the green box, a support program must meet the following fundamental requirements: the program must be publicly funded, not involve transfers from consumers, and not have the effect of providing price support to producers. In addition, the program must meet specific policy criteria listed in Annex 2 of the AoA, including, among others, subsidies for research and development and general services and infrastructure, as well as environmental subsidies. A program that fails to meet both the fundamental requirements and the policy criteria must be reported to the WTO as amber box.¹³

The Annex 2 list of policy criteria for green box subsidies includes certain limitations or exceptions. For example, support for research and other general services or infrastructure cannot take the form of direct payments to producers or processors. For environmental subsidies to qualify for green box treatment, “[t]he amount of the payment shall be limited to the extra costs or loss of income involved in complying with the government programme.” Annex 2’s “Payments under environmental programmes” does envisage that environmental subsidies based on fulfillment “of conditions related to production methods and inputs” would qualify for the green box.

Illustrative WTO Legal Analysis of Biofuels Subsidy Programs

In order to provide a more concrete sense of the WTO legal issues that arise for biofuels subsidies, what follows is an examination of some different kinds of subsidy programs through the lens of the SCM actionability criteria – i.e., whether they constitute a “financial contribution”, confer a “benefit”, are sufficiently “specific”, etc. The purpose of working through the examples is not to make a judgment as to whether any existing government program is WTO-illegal, which would require a comprehensive analysis of the facts specific to that one program, but rather to illustrate the different kinds of legal issues raised by different kinds of biofuel subsidies.

Subsidies on Production of Biofuels

Production subsidies can include recurring payments based on the quantity of production (for example, 50 cents per each gallon of fuel produced) or non-recurring subsidizing of capital costs (physical plant, etc.). Whether a production subsidy is delivered as a tax credit or a cash payment, there is clearly a “financial contribution” within the meaning of the SCM Agreement’s criteria for actionability. In the case of taxation-based measures, the key question is whether the government has “foregone revenue otherwise due.” A tax credit by its very structure would seem to meet this criterion and thus raise concerns.

However, it may be possible to restructure a biofuels tax program to be more WTO-consistent, given that the SCM Agreement allows each WTO Member autonomy to establish the general principles and policies underlying its taxation system. If, for instance, a subsidizing government replaced its biofuels tax credit with an environmental tax on all fuels, the amount of which was based on the environmental characteristics of each particular fuel, but was applied in accordance with a general principle of internalizing the environmental externalities from fuel consumption,¹⁴ there might no longer be a “financial contribution” within the meaning of the SCM Agreement, despite the more favorable tax treatment that ethanol producers would receive compared to producers of dirtier fuels.

The second question for WTO actionability would be whether such subsidies confer a “benefit” in the sense of a competitive advantage that would not exist in a normal, or undistorted market. This is not an easy question: demand, supply and price of biofuels in global markets have been pervasively influenced by government interventions of many kinds. (In fact, this is true of fuel energy markets generally.)

Here it may be worthwhile to make a more general point: precisely because of the pervasiveness of biofuels market interventions, resort to dispute settlement in relation to such subsidies may not be a realistic option. In a situation where everyone is subsidizing, bringing a claim against one country’s subsidies may well trigger a counter-claim against one’s own or a challenge to other measures that support the industry in question in the country bringing the original complaint, leading to spiraling trade tensions. In such a situation, rather than “settling” the dispute by coming into compliance, WTO members may well prefer to incur retaliation.

Subsidies on Consumption of Biofuels

A good example of subsidies to consumption are the various exemptions from gasoline tax that EU Member states have granted to purchasers of biofuels, pursuant to the 2003 EU biofuels directive. By the terms of the directive, these exemptions are to be no greater than required to offset the additional cost of using biofuels rather than gasoline.

Here there is obviously a “financial contribution” within the meaning of the SCM Agreement as the government is forgoing “revenue otherwise due” under gasoline taxation policies. There are serious questions, however, about whether the subsidy confers a “benefit” and whether it is “specific.” This kind of subsidy is available throughout the economy, i.e. to any user of fuel and in fact is used throughout the economy. Therefore it is almost by definition not specific as long as we regard the beneficiaries of the subsidy as the consumers of fuel.

This brings us to the question of “benefit”: it is unclear that the direct users of the subsidy receive any benefit in the sense of competitive advantage as the subsidy merely reduces the price of alternative fuel to the price of gasoline, and so does not provide the user with any possibility of lowering its fuel costs per se.

If, however, we were to view the subsidy as an upstream subsidy to the biofuels industry, it might be possible to characterize it as specific, depending on how diverse we regard the biofuels sector and the number of firms participating. The question would be then whether any “benefit” is conferred on EC biofuels producers, in the sense of a competitive advantage. To the extent that the tax exemption does not require that the biofuel being purchased be produced within the EC, it is difficult to see how it would afford a competitive advantage to EC producers of biofuels over producers in other WTO Members.

Subsidies on Feedstocks for Use as Biofuels Inputs

It is important to distinguish between subsidies that governments provide to feedstocks as part of general programs of agricultural support and those that they target to that part of the production intended for biofuels use. In both the US and EU, inputs to biofuels are often subsidized in the former context. Such general support subsidies must conform to both the rules in the SCM Agreement and the disciplines of the AoA, such as the aggregate support ceilings. From the perspective of understanding trade in biofuels, the interesting questions are whether, under the SCM Agreement, general support for feedstocks could be regarded as downstream subsidies to biofuels producers, and whether, under the AoA, they could be considered “green box” subsidies.

On the first question, that of downstream subsidies, one would have to ask whether, given the nature of the downstream users, the subsidy is “specific” and whether those users actually receive a “benefit” in the sense of a competitive advantage. For instance, it would be hard to view as “specific” corn subsidies that are part of general agricultural support programs, since they potentially benefit a wide and very diverse variety of industries that use corn as inputs, including the processed food industry, the alcoholic beverages industry, and the animal feed industry. As regards “benefit,” such subsidies are typically not restricted on their face to production that is destined for exclusively domestic downstream users and so it is unclear that it creates a competitive advantage for domestic downstream industries over foreign industries producing like products. In practical terms, however, transportation costs and logistics may mean that only domestic downstream industries can use the subsidy and in such a case it might be possible to show that they receive a competitive advantage. Whether there is a benefit upstream or downstream should not be assumed; it has to be proven based on a careful analysis considering all the facts in the case at hand.

The answer to the second question — whether a subsidy on production of feedstocks destined for biofuel use could qualify as “green box” based on environmental benefits — is likely negative: the AoA appears to limit such “green box” environmental subsidies to those that are intended to compensate a producer for the costs of complying with government environmental programs.

A different example of a subsidy on feedstocks is illustrated by the trend in both the EU and the US to allow farmers to produce biomass inputs for biofuels on “set-aside land” — land which farmers have been paid to remove from agricultural crop production. The question is whether the production of biofuel inputs falls outside of the AoA’s meaning of “marketable agricultural production” for purposes of amber box support ceilings. On the one hand, clearly, the products are not destined for use as food or animal feed and are not marketed as agricultural products. On the other hand, because these products have multiple uses, including food and feedstuff uses, such programs will at the margin affect the supply and price of the commodities in question in general, and thus at the margin have an impact on competition in the food and feedstuff markets for those crops.

The case of farmers being permitted to grow switchgrass for production of ethanol on set-aside land is very likely to be consistent with the AoA, as switchgrass is not generally regarded as a “marketable agricultural product” itself.

Another kind of difficult-to-categorize measure is represented by the EC energy crop payment, introduced with the 2003 Common Agricultural Policy (CAP) reform. This is an additional payment to farmers based on the amount of land used to produce energy crops, and is thus arguably not decoupled from production.

Subsidies to Byproducts Created in the Manufacturing of Biofuels

Another question worth examining is whether biofuels subsidies can in some situations be passed through to commercially valuable byproducts of the production process so as to provide a “benefit” actionable under the SCM Agreement. The production of biodiesel, for example, yields significant quantities of glycerol, raising the question of whether subsidies paid on the production of the fuel could be regarded as “passing through” to producers of glycerol. The meaning of “benefit” under WTO subsidies law is a competitive advantage and not merely a financial advantage. Since any competitive advantage in glycerol would flow from the inherent fact of producing ethanol (whether subsidized or not); there is a good argument for viewing the subsidy as fully “consumed” by the ethanol production itself and thus not actionable.

Subsidies that increase production of biofuels also lead to an increased production and possibly surplus of by-products, for example, rapeseed meal from rapeseed oil biodiesel in the EU, and distillers dried grain and distillers dried solubles from ethanol biofuels production in the United States. While the expansion of the biofuels industry in both the EU and US is unlikely to be able to meet domestic biofuel demand, the increases in by-products may overtake domestic demand for such products, lowering prices. Such surpluses of what could arguably be considered “cross-subsidized” by-products could lead to increased exports and the displacing of other meal and grain product providers. These “adverse effects” on competitors, another criterion for actionability, could possibly lead to queries about the biofuels subsidies’ WTO compatibility.

Domestic Regulations/Standards and WTO Law

The third set of WTO issues that arise in the biofuels sector pertains to domestic regulations and standards, of which there are many.

The internal, or domestic, policies of governments (technical regulations, subsidies, government procurement practices, etc.) that restrict market access or alter the competitive relationship between domestic and imported products in favor of the former can undermine negotiated tariff reductions and disciplines on other “border” measures (such as quotas or bans on the import and export of particular products). Such policies usually serve legitimate governmental objectives. On the other hand, they may be more trade-restrictive than necessary to achieve those objectives, and in some cases are intentionally designed to advantage domestic interests, raising WTO-compatibility concerns.

Many of the WTO’s disciplines are designed to make difficult distinctions between internal policies that are legitimate exercises of domestic regulatory autonomy (even if they have some trade-restrictive effects) and those that can be considered a form of protectionism or “cheating” on the WTO bargain, in that they undermine the market access reasonably expected from Members’ commitments to liberalize trade. These WTO disciplines are set forth in, among others, the General Agreement on Tariffs and Trade (the GATT) itself and its general exceptions; the Technical Barriers to Trade (TBT) Agreement (requirements for national standards and regulations concerning goods); the Sanitary and Phytosanitary Measures (SPS) Agreement (requirements for national measures directed at health, safety, and pest introduction from imported goods, mostly food and agricultural products); and the Government Procurement Agreement (GPA). Each is examined more fully below.

The General Agreement on Tariffs and Trade (GATT)

The cornerstone of the WTO approach to domestic policies is the principle of non-discrimination. Enshrined in the GATT are requirements that Member governments are to accord the goods and services of fellow members 1) National Treatment (i.e., give them the same treatment as domestic goods and services); and 2) Most Favored Nation Treatment (MFN) (i.e., give the same treatment to goods and services of all other Members, rather than favoring some over others based on their country of origin). The GATT does, however, provide a variety of exceptions to these obligations for measures that are directed to certain public policy objectives, provided the measures meet certain requirements (discussed more below).

Internal Taxation Measures

The GATT's National Treatment and MFN obligations apply to both fiscal measures, such as taxes, and nonfiscal measures, such as domestic regulations. Article III:2 of GATT governs the internal taxation of products by WTO Members; as interpreted judicially, it 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 products" not be "dissimilar" in such a way as "to afford protection to domestic production."¹⁵ The assessment of whether two products are "like" or "directly competitive or substitutable" is a matter of case-by-case examination of the facts, weighing all relevant evidence regarding physical characteristics, end uses, and consumer habits.

Explicitly or facially discriminatory tax measures are almost certain to violate the national treatment obligation. For instance, a tax concession with respect to biofuels — either in general or for a particular fuel or fuels — would violate the GATT's National Treatment obligation if the concession depended upon purchasing domestically-produced fuel.

Less well defined, and controversial in WTO law and policy, are the circumstances under which de facto, or disparate impact, discrimination is GATT-illegal. Consider for example, mandates or differential taxation that do not explicitly favor domestic producers but rather particular biofuels or feedstocks in which domestic producers have a comparative advantage. An example is the US excise tax credit for fuel ethanol, which applies to both domestic and imported ethanol. Foreign producers of biofuels other than ethanol might argue that their own products are "like" or "directly competitive or substitutable" and should thus qualify for the tax credit. However, there are significant differences in physical characteristics and uses and performance that distinguish ethanol from biodiesel, for example, making it improbable that the products in question would be found to be "like" or directly competitive or substitutable.

Non-Fiscal Internal Measures

Article III:4 of the GATT sets out the National Treatment obligation with respect to internal laws, regulations and requirements other than tax measures. The determination of whether a non-fiscal measure violates National Treatment entails two distinct steps: first, ascertaining whether the imported product and the domestic product are "like," by weighing and evaluating the same kinds of factors as is the case for fiscal measures—including physical characteristics, end uses, and consumer habits; and second, if "likeness" is found, determining whether the regulatory distinction between the two products results in less favorable treatment of imports. In other words, governments are not forbidden from making regulatory distinctions between like products; they just cannot provide less favorable treatment for imports.

A wide range of internal regulations concerning biofuels could have an impact on trade:

- mandates to use particular percentages or quantities of biofuel either in fuel blends or for specific purposes (such as bus or taxi fleets);
- restrictions or limits on the amount or kind of biofuel that can be contained in a blend with conventional fuel;
- specifications of the properties or performance characteristics of particular biofuels or the materials they must be derived from;
- labeling for consumer protection and information purposes;
- health and safety regulations concerning the handling and transportation of particular biofuels or inputs required for the processing of biofuels, and related specifications for processing plants;
- broad environmental performance requirements related to the entire life-cycle of the product, including the sustainability of the agriculture used to produce the feedstock from which the biofuel is processed.

There is little question but that mandates that explicitly or facially discriminate in favor of domestic products over imports, for instance through requiring that the mandate be fulfilled in whole or in part using domestically-sourced biofuels, would violate the GATT's National Treatment obligation. Similarly, mandates (or tax concessions) linked to the feedstock used in the production of biofuels being produced domestically would also violate National Treatment. In this latter case, the discrimination would exist both against foreign producers of biofuels (who may be forced to use either costly feedstock from the importing country for the fuel to qualify for the mandate or concession with the likely result that they cannot economically sell fuel into that market) as well as against foreign producers of feedstock itself.

Environmental Sustainability Standards

Mandatory or tax concession-linked conditions concerning the environmental performance of particular biofuels pose a complex set of issues. To illustrate, consider three stylized or hypothetical examples of possible environmental performance conditions that an importing WTO Member might impose:

- conditions that address the environmental impact of biofuels in the country of import (e.g., volatility, or toxicity of additives);
- conditions that seek to maximize the contribution of biofuels to reducing carbon emissions and thus look to the net effects of a particular fuel on carbon emissions throughout its entire life-cycle, including carbon emissions in the production or processing of the fuel and the feedstock inputs;
- conditions that go beyond carbon emissions to promoting sustainable agriculture in the country producing the feedstock for the biofuel. This could range from labor and social effects to deforestation, fertilizer use and habitat protection.

The first kind of environmental measure is unlikely to violate the GATT National Treatment obligation, assuming that it is not drafted or structured in such a way as to be more burdensome on foreign than on domestic producers. The difference in environmental impacts in the importing country would normally be traceable to some physical difference in the products in question, could well affect end-uses, and may also be a concern to consumers. Thus, the product complying with conditions that relate to post-import environmental impacts may well be found "unlike" a non-compliant imported product.

The WTO-legality of the second kind of measure, to the extent that it concerns itself with environmental impacts from the process of production in the WTO Member producing exports or some third country WTO Member producing inputs, is less clear cut. It raises the controversial issue of the so-called product-process distinction; namely, whether the GATT permits an importing country to treat products differently based on their method of production as opposed to their properties as products for consumption.¹⁶ The infamous unadopted Tuna/Dolphin GATT panel rulings of the early 1990s would say it does not. Current jurisprudence, however, on how to determine “likeness” and “directly competitive and substitutable”, does not appear to predetermine a conclusion one way or another concerning methods of production; moreover, it emphasizes 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. Carbon emissions, given their greenhouse gas effects, are clearly a global environmental problem and to the extent that a WTO Member is addressing this global problem in its environmental regulations on biofuels it would be illogical not to take into account the overall impact of a particular fuel throughout its lifecycle on global carbon emissions.

The third type of environmental performance measure, which would impose conditions related to the sustainability of the production of the feedstock from which the biofuel is produced, also presents product-process issues.

Mandatory sustainability criteria are under active policy discussion in many jurisdictions, particularly in the EU.¹⁷ In the Netherlands a Ministry of Housing and Environment project group has developed possible criteria for sustainable biomass production.¹⁸ Next door in Germany, there is, at the time of writing, active discussion as to the means by which various tropical oils are produced (especially palm oil) with particular concern expressed about de-forestation and carbon issues. It is clear from these examples that the hypothetical issues examined here are rapidly transitioning to the domain of public debate and input into the policy process.

The degree of international consensus behind a domestic measure is a factor in its WTO compatibility. Where an importing country bases differences in treatment among biofuels on sustainability norms, criteria and methods which are widely accepted in the international community and which have been developed through broad consultation among diverse states, taking into account the variety of conditions in different countries, it should be difficult for a complaining WTO Member to establish that there is an overall bias against imports as a group.

It may be worth giving serious consideration to the recommendation of a WorldWatch study that international sustainability criteria be developed,¹⁹ although given the many views on what such criteria should encompass, consensus would likely be difficult to reach. At the same time, an international consensus on core criteria need not preclude individual countries imposing additional criteria, provided those are based upon established methodologies (such as life cycle product analysis) and on concerns that are supported by international norms (such as those on sustainable development reflected in various international legal and policy instruments).

Exceptions from GATT Obligations

The GATT provides a variety of exceptions to MFN, National Treatment, and its other obligations. Article XX sets forth exceptions that “save” otherwise GATT-illegal measures, provided that the measures are directed to certain public policy objectives (e.g., public morals, human health and safety, the conservation of exhaustible natural resources) and that they are not applied in a manner that is arbitrary, unjustifiable, or a disguised restriction on trade.

Two of particular relevance to biofuels requirements are GATT Article XX(b), which provides an exception for measures “necessary to protect human, animal or plant life or health”, and GATT Article XX(g), which permits otherwise GATT-inconsistent measures that are “relating to the conservation of exhaustible natural resources.”

A specific condition of Article XX(g) is that the trade measures in question must be taken in tandem with comparable measures restricting domestic production or consumption (even-handedness).

The possible relevance to biofuels of these two GATT exceptions can be seen through their application to a hypothetical mandate that explicitly favors domestic producers of fuel and/or feedstocks over foreign producers.

It could perhaps be argued that ensuring an adequate domestic supply of biofuels is directly related to the conservation of exhaustible natural resources (e.g., fossil fuels, or clean air), or necessary to the goal of protecting human life and health, especially where such a supply is not securely available from non-domestic sources. It would certainly be more debatable, however, whether discriminatory measures of this kind, as opposed to subsidies and non-discriminatory mandates, are really needed to create a viable domestic industry and even more debatable whether they could be justified once one is no longer dealing with an infant industry. These exceptions might also be invoked to justify sustainability criteria that discriminated against certain biofuels imports. However, a government designing such a measure should take into account the different conditions in the territory of exporting states, in order to avoid running afoul of Article XX's requirement that a measure not be applied so as to create arbitrary or unjustifiable discrimination.

Two other potentially relevant exceptions are GATT Article XX(j), which provides an exception for measures "essential to the acquisition or distribution of products in general or local short supply," and the National Security Exception in Article XXI of the GATT. The National Security Exception provides, in part, that "Nothing in this Agreement shall be construed...to prevent any contracting party from taking any action which it considers necessary for the protection of its essential security interests ... taken in time of war or other emergency in international relations." It is not implausible to characterize the current global situation as one of a "time of war or other emergency in international relations," and it is widely acknowledged that energy security is a vital dimension of national security generally.

The WTO Technical Barriers to Trade Agreement (TBT)

The TBT Agreement applies to mandatory measures that specify the characteristics of products and their "related processes and production methods (Annex 1:1)." The TBT Agreement also contains a code of good practice urging WTO Members and the non-governmental standard-setting bodies within their jurisdiction to use international standards as the basis for their voluntary standards.

The TBT Agreement's main requirements are:

- that international standards be used, where possible, as a basis for technical regulations (Art. 2.4), and
- that technical regulations not constitute an "unnecessary obstacle to trade" (Art. 2.2); in other words, 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").

Generally speaking, international standards have not yet been developed for biofuels, although components of standards promulgated by domestic or European standards bodies or authorities may reference international standards, such as ISO standards in relation to testing of certain characteristics of substances. In the absence of such international standards, certain non-discriminatory domestic regulations (i.e. consistent with MFN and

National Treatment obligations of the GATT) may still be challengeable under TBT for creating unnecessary obstacles to trade in biofuels. For example, internal regulations that limit the percentage of biofuel in blends “often based on not entirely justifiable environmental reasons” may have trade restrictive effects.²⁰

The EU biodiesel standard, which provides specifications for 100% biodiesel used as fuel in transport sector,²¹ may have trade implications. Since the specifications and test methods for biodiesel production are based on rapeseed oil’s properties, producers need to either use rapeseed oil or invest in R&D to create a biodiesel that would still qualify for the norm.²² To avoid curtailing imports, the EU may need to rethink both the standard and the blending percentage, while ensuring that concerns over automotive engines are addressed.

The WTO Sanitary and Phytosanitary Standards Agreement (SPS)

The SPS Agreement applies to internal regulations that address certain risks arising from trade in food and agricultural products (e.g., noxious weeds or insect pests that accompany shipments of grain or other biomass). In what is, effectively, an exception to the MFN obligation, the agreement allows WTO Members to place restrictions on imports from particular other WTO members, provided that such measures be based on scientific principles and evidence and be supported by risk assessment. It, like the TBT Agreement, favors measures based on international standards and requires domestic regulations to be no more trade restrictive than necessary to achieve the legitimate risk management objectives for which they were designed.

Regulations concerning biofuels and their feedstocks that deal with environmental, health and safety considerations may well address SPS risks. For instance, the SPS Agreement applies to “risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms” and “risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs.” (Annex A) Some of these risks could clearly arise from the international trade and transportation of feedstocks for biofuels, including biomass or biowaste. As a matter of internal regulation, some jurisdictions apply food safety regulations to the transportation of certain biofuels because the substances, despite their use as fuel, correspond to definitions of foodstuffs in domestic law. Biomass may fall within legal definitions of waste and therefore be regulated in those terms without regard to the different risk management issues that arise from the fact that the material is not entering the jurisdiction to be disposed of as waste but to be transformed into or used for fuel.

As a general matter, a measure will be governed by either SPS or TBT but not both. However, in recent jurisprudence relevant to biofuels regulation, the WTO indicated that if an internal regulatory scheme addressed itself both to SPS related risks and to other public policy goals, the measure could be considered under both agreements.

Government Procurement

The WTO Government Procurement Agreement (GPA), which sets rules for its Member governments’ purchasing decisions and granting of contracts, can also have a bearing on biofuels policies. At various levels of government and in a number of different countries, government procurement regulations and policies exist that either mandate or permit government purchasing decision-makers to give preference to biofuels and biofuel-powered vehicles. In the United States, for example, the U.S. Postal Service, the U.S. military, and many state governments are requiring their bus and truck fleets to incorporate biodiesel fuels as part of their fuel base.²³ Many jurisdictions, including the US and the EC, also have general requirements that decision-makers, in their purchasing decisions, take into account environmental effects, energy efficiency or whether an energy source is renewable.²⁴

The GPA's obligations include nondiscrimination (national treatment and MFN) in the awarding of government contracts; more specifically, that the products, services and suppliers of other GPA members be given "treatment no less favorable" than "that accorded to domestic products, services and suppliers." The GPA also requires that procurement specifications be based on international standards where available and, if not, on national technical regulations, and that the specifications not constitute an unnecessary obstacle to trade. GPA members are also expected to favor performance-based specifications over product characteristics.

The GPA's relevance to biofuels policies and programs is, however, somewhat circumscribed. First, membership in the GPA is voluntary, with only some WTO Members having elected to adhere to it. Notably for biofuels, to date the US, the EU and its member states, Japan, and Canada are members; Brazil, Australia, and the developing countries are not.²⁵ Second, the GPA's coverage is not comprehensive: its members can specify which of their government agencies and which level of government (federal, state/provincial, local) are included, and can specify various exceptions such as for small and medium-sized enterprises or for particular kinds of procurement, such as the procurement of research and development services. For example, only a select sub-set of the state governments in the US are covered by the GPA. Particularly relevant to the biofuels context is, for example, the EC's exclusion "for the purchase of water and for the supply of energy or of fuels for the production of energy" by a range of procurement entities, as well as the exclusion of "procurement of agricultural products made in furtherance of agricultural support programs and human feeding programs" and procurements by some procurement entities in connection with activities in the fields of drinking water, energy, transport or telecommunications.

One area of some uncertainty in GPA law relevant to biofuels is governments' ability to specify non-economic (by which is often meant environmental and social) criteria for suppliers as conditions for the award of procurement contracts. The relevant provision of the GPA stipulates 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." This provision has been interpreted by some commentators to exclude non-economic criteria.²⁶ However, this particular provision is about the qualifications of suppliers to fulfill a contract for certain goods and services; not about how the goods and services themselves are specified in the contract. Thus, a strong argument can be made that a government could condition the award of the contract on the supplier's overall environmental or energy conservation performance – e.g., with respect to use of biofuels — so long as the evaluation criteria are specific and transparent. For example, a government could limit the bidding on courier services to companies that, in all their global operations, use only vehicles running on biofuels.

Conclusions and Recommendations

It is clear that there has been major growth in interest in biofuels over the last two years of high energy prices. This interest is being converted into concrete action at a rapid pace, as witnessed by:

- large new subsidy and mandate commitments in developed nations, particularly the United States and the European Union;
- steep increases in private investment in biofuel production in the US, EU and other countries, partially due to the considerable government support measures to the sector;
- major commitments to growing biofuels feedstock crops in much of Asia, including large commitments of hectareage for new palm oil plantation. This is particularly true in Indonesia and Malaysia, and to a lesser extent in Thailand, as well as coconut oil plantations in the Philippines, and jatropha plantations in India;

- the emergence of government supported biofuels programs in the least developed countries, particularly in Africa (but also in Vietnam) for research into biofuels suited to local conditions, production of feedstocks and of biofuels.

High prices for fossil-based transport fuels make biofuels—while still expensive in relation to fossil-fuels—more economically viable, and could lead to a decrease of government subsidies in the US and EU. Already, considerable and possibly further increased mandates, combined with the limited land availability in developed countries, appear to be pointing toward the potential of a growing biofuels trade. Furthermore, large new commitments to plantations to grow feedstocks (in addition to the cumulative effect of a myriad of smaller ones) will bear fruit in the coming years in Brazil, South East Asia and elsewhere. Increased interest in biofuels resulting in enhanced funding for research and development will result in improved methods of production and more easily handled fuels.

However, as this paper suggests, for this potential growth in trade to occur, a clarification of how international trade rules apply to the sector is advisable. Uncertainty over biofuels classification, and the range of government measures to protect domestic biofuel production— from tax incentives, high tariffs and subsidies—risk stunting growth in trade even as the global demand for biofuels is rising. A web of separate technical and environmental standards also risk interfering with the potential for greater trade in biofuels.

Even supposing that trade in biofuels remains limited, this paper recommends a closer look at WTO rules. A greater clarity about subsidy notification requirements and a closer look at potential cross-subsidization of by-products associated with biofuel production is useful, given the uncertainty of whether WTO rules for agricultural or industrial products are applicable. The purpose of this paper is to touch on those issues that could usefully be clarified in the quickly growing biofuels sector, and to facilitate a discussion on the future direction of government measures.

Endnotes

1 Available at www.agritrade.org/Publications/wto_biofuels.html.

2 A clear and accessible explanation of the Harmonized System and the role of the WCO can be found in R. Steenblik, "Liberalising Trade in 'Environmental Goods': Some Practical Considerations," OECD Trade and Environment Working Paper No. 2005-05, particularly annex A1.

3 For a detailed treatment of these negotiations, see R. Howse and P. B. van Bork, Options for the Liberalisation of Trade in Environmental Goods in the Doha Round, International Centre for Trade and Sustainable Development, Geneva, July 2006.

4 The WCO's Explanatory Notes read as follows: "a mixture of mono-alkyl esters of long-chain [C16-18] fatty acids derived from vegetable oils or animal fats, which is a domestic renewable fuel for diesel engines and which meets the specifications of ASTM D 6751 [American Society for Testing and Materials "Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels]."

5 R. Steenblik, *supra* n.1, p. 16.

6 As will be discussed below in the subsidies section of this paper, The Agreement on Agriculture contains disciplines on subsidies that are in addition to those that apply to all products under the WTO Subsidies and Countervailing Measures (SCM) Agreement. For instance, trade-distorting domestic subsidies that fall into the so-called "amber box," i.e. that are not subject to the so-called "green box" carve-out, must be notified to the WTO and must fall within certain quantitative ceilings. Thus, whether a particular product falls within the AoA can have important implications for disciplines on government supports for that product.

7 See the extensive and informative discussion of this issue in Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21st Century, Final Report, Prepared by the Worldwatch Institute for the German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), in cooperation with the Agency for Technical Cooperation (GTZ) and the Agency of Renewable Resources (FNR), Washington, D.C., August 2006.

8 The current blending ratio in Brazil is 25% ethanol/75% gasoline.

9 With the enthusiastic support of the U.S.'s powerful farm-based lobbies, who also strongly supported these measures.

10 Not counting various State level measures these acts were: The Alternative Motor Fuels Act of 1988, the Clean Air Act of 1990, the Energy Policy Act of 1992, the Biomass Research Act of 2002, the Farm Bill 2002 and the Energy Policy Act of 2005.

11 The energy crop premium consists of a payment of 45 Euros per hectare in addition to decoupled payments. Condition for payment is that there must be a contract with a processor, unless the crop is processed on the farm. Hansen, S and van Vaals, M, Biofuels in the EU — Changing Up Gears, November 2005, Rabobank International, Utrecht, The Netherlands, p.24.

12 A program may provide incentives with respect to more than one kind of biofuel; for example, ethanol and biodiesel; the former falls within the AoA and the latter does not, so the question then becomes even more complex. It is necessary to try and isolate the effects of the operation of the program on ethanol alone in order to determine if these incentives attract "amber box" notification requirements.

13 United States Department of Agriculture, "2007 Farm Bill Theme Paper: Energy and Agriculture", Washington D.C., August 2006, p. 18.

14 Thus a subsidy could result in the relative prices of various fuels corresponding more closely to their relative environmental friendliness, providing incentives to choose those fuels that create fewer negative environmental externalities.

15 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 Japan-Alcoholic Beverages.

16 See, for a discussion of the possible relevance of the product/process distinction in the Tuna cases in this context, C. Lancaster, "Biofuels assurance schemes and their compatibility with trade law," power point presentation, Piper Rudnick Gray Cary, Brussels, 7 June 2006.

17 See recommendation 2410 in Worldwatch Institute, Biofuels for Transportation, *supra* n. 6. Also see, from the Dutch Ministry of Housing and the Environment (VROM), "Criteria for duurzame biomassa productie" [Criteria for Sustainable Biomass Production] by the Projectgroep Duurzame productie van biomassa [Project Group for Sustainable Production from Biomass]

August 2006, <http://www.vrom.nl/pagina.html?id=2706&sp=2&dn=w690>, for an extensive review of current Dutch thinking and proposals for Dutch regulation in this matter. It is also to be noted that as of September 2006 there is an ongoing discussion about the environmental dimension of palm oil (and similar oils) production, the Roundtable on Sustainable Palm Oil. See: <http://www.rspo.org>.

18 See "Criteria for duurzame biomassa productie", *ibid*.

19 See Worldwatch Institute, Biofuels for Transportation, *supra* n. 6.

20 S.T. Coelho, "Biofuels-Advantages and Trade Barriers," UNCTAD/DITC/TED/2005/1, UNCTAD, Geneva, 2005, p. 4.

21 Biodiesel norm, EN 14214 'Automotive Fuels – Fatty Acid Methyl Esters (FAME) for Diesel Engines – Requirements and Test Methods.

22 Hansen and van Vaals, Biofuels in the EU; *supra* n. 10

23 CRS Report for Congress, Agriculture-Based Renewable Energy Production, Updated May 18, 2006, p. crs-17.

24 For a survey, see P. Kunzlik, "National Procurement Regimes and the Scope for the Inclusion of Environmental Factors in Public Procurement," in OECD, The Environmental Performance

of Public Procurement: Issues of Policy Coherence, 2003. See, also, *Buying Green: A handbook on environmental public procurement*, European Commission, 2004.

25 The WTO Members who are also members of the Government Procurement Agreement include Canada, European Communities (including its 25 member States: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom), Hong Kong China, Iceland, Israel, Japan, Korea, Liechtenstein, Netherlands with respect to Aruba, Norway, Singapore, Switzerland, and the United States.

26 See for instance, H.-J. Priess and C. Pitschas, "Secondary Policy Criteria and Their Compatibility with EC and WTO Procurement Law" (2000), 9 *Public Procurement Law Review* 171.

About IPC

The International Food & Agricultural Trade Policy Council (IPC) pursues pragmatic trade and development policies in food and agriculture to meet the world's growing food needs. It accomplishes this mission by convening influential policy-makers, agricultural trade experts, agribusiness executives, farm leaders, and academics from around the globe to clearly articulate complex issues, build consensus, and advocate policies to decision-makers and foster broader stakeholder participation in the policy process.

With its broad and diverse membership, IPC represents a global voice and interests at stake in agricultural policy debates. IPC's members are an independent group of influential leaders in food and agriculture from developed, developing, and least developed countries, and are chosen to ensure the Council's credible and impartial policy approach. Members have extensive experience in farming, agribusiness, government, and academia. Feel free to visit our website at: www.agritrade.org.

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