

Global Challenges at the Intersection of Trade, Energy and the Environment

Conference Draft, 1st October 2009

The Challenges of Trading Alternative Energy¹

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¹ Background paper prepared for **Panel 2: Import, Export and Production Restrictions on Energy Goods & Services**, of the Conference *Global Challenges at the Intersection of Trade, Energy and the Environment* 22nd and 23rd October 2009, Organised by the Centre for Trade and Economic Integration (CTEI) at the Graduate Institute of International and Development Studies, Geneva, in collaboration with the World Trade Organization.

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For many years, Brazil has been the only country with a well established policy to promote the use of biofuels, and especially ethanol. The origin of ethanol production in this country goes back to in the 70s when the *Proalcool* program was developed by the government in response to the two oil shocks. However, at the beginning of the 2000s, more countries developed an interest in producing and using biofuels and the production of these renewable alternative fuels increased considerably – from 15 billion liters in 1990 to 79 billion liters in 2008, of which 84% are ethanol. Two main factors explain why the demand for biofuels started to boom. The first factor is the rising interest of developed countries in using ethanol as an additive to regular gasoline as a way to reduce their dependence on fossil fuels for transportation and also aid in the protection of the environment by reducing CO2 emissions; while the second factor is the introduction of flex-fuel vehicles FFV (cars that can run on 100% ethanol, 100% gasoline or any mix of the two fuels) in the Brazilian market in 2003, another significant contribution to the growth in ethanol production. These vehicles proved to be very popular and today 90% of the sales of new cars are FFV in Brazil. This way, ethanol is used in two different ways in Brazil: blended into regular gasoline at a mandatory rate fluctuating between 20 and 25% and/or directly in the tank of FFV. Thanks to this, the country has already managed to replace 50% of its gasoline consumption with renewable ethanol.

Over the last decade, several countries have passed legislations to promote biofuels. In 2006, the United States (U.S.) adopted the Renewable Fuels Standard (RFS) that mandates the consumption of 136 billion liters of biofuels by the year 2022. Two years later the European Union (EU) approved a directive on the promotion of renewable energy sources to incorporate at least 10% of renewable energy in the transport sector in 2020. This regulation replaces Directive EC 2003/30 that established a non-binding target of 5.75% for biofuels consumption in 2010. In Asia, the use of renewable biofuels is also encouraged in some countries. A mandatory 10% biofuels blend is in force in five Chinese provinces as well as in the largest cities of five additional provinces and a 3% ethanol blend is allowed in Japan. Other Asian producing countries, such as Thailand, Philippines and Indonesia are also promoting larger-scale biofuels programs. Various countries in Africa are promoting the production and use of biofuels as well.

However, despite the enthusiasm of many countries for biofuels, the international market remains small and volatile. Approximately 10% of the ethanol world production is traded and this share did not increase in recent years although production is booming. Brazil, as the world pioneer in the production of ethanol, remains the largest exporter, with 5.1 billion liters exported in 2008 to more than 40 countries, although the exports are still concentrated in two markets: the US and the EU. Nonetheless, exports are heavily dependent on unpredictable windows of opportunities and, up until now, ethanol has been unsuccessful in becoming a global commodity, mainly due to the increasing tariff and non-tariff barriers that this product is facing in the majority of the big markets.

Tariff barriers

From a customs classification perspective, all biofuels do not enjoy a similar treatment. While biodiesel is treated as a chemical product and is classified in heading 3824, ethanol is considered an agricultural product and is classified in heading 2207. This differentiation results in an asymmetry of tariffs applied to biofuels, with biodiesel benefiting from relatively low tariffs in the majority of the big markets and ethanol facing very high import duties as shown in table 1.

Table 1 – Bound tariffs for biofuels

	Ethanol (tariff in ad-valorem equivalent)	Biodiesel (tariff in ad-valorem equivalent)
European Union	42.9%	6.5%
United States	46%	1.9%
Japan	27.2%	3.9%
China	30%	9%

Note: Tariffs on ethanol imports are usually specific or compounded tariffs. They have been converted into ad-valorem equivalents according to the methodology agreed upon in 2006 in the framework of the Doha Round negotiations.

Sources: WTO tariff database and USITC.

High tariff barriers constitute the main obstacle to the trade of ethanol, which is the main source of renewable energy that is traded internationally. As any alternative fuel currently available on the market, the production costs of ethanol are often higher than the ones of oil production. Brazil is the only country where ethanol is competitive at 4050 USD per barrel. As such, the high tariffs imposed on ethanol – that do not apply to oil products – make imported ethanol uncompetitive with respect to fossil alternatives in the majority of the consuming markets and, therefore, severely limit trade flows. Unfortunately, perspectives for tariff reductions do not look bright. At the Doha Round negotiations, the EU has already flagged its intention to classify ethanol as a sensitive product which means that the tariff reduction will be extremely limited. In regards to the U.S., the more restrictive component of its tariff is a secondary duty (54 cents per gallons) that has been continuously renewed by the U.S Congress over the last decades and that is not included in the U.S. bound tariff schedule. This way, this duty will not be affected by the tariff cuts resulting from the Doha Round.

What is the logic behind a trade policy that taxes imports of clean, renewable fuels like sugarcane ethanol, but allows almost duty free access for dirty, non-renewable and price-volatile oil?

If major economies are serious about reducing their consumption of fossil energy in order to limit their CO₂ emissions, bioenergy and ethanol in particular cannot be considered as agricultural products anymore. A differentiation regarding the final use of the product must be established in order to change the tariff classification for bioenergy and set a lower tariff for this product. In the case of ethanol, this could be easily done since the specifications of the product are different depending on the end-use (fuel, industrial and beverage). Another way to solve this issue is to advance the discussions on environmental goods and services in order to include bioenergy products. Currently, only equipments to produce bioenergy are incorporated into this list.

Environmental requirements

High tariffs are currently the main challenge for bioenergy trade. However, new non-tariff barriers are emerging in different places of the world and their potential to limit trade in bioenergy is significant.

Some countries are conditioning the use of bioenergy in their market to the respect of specific sustainability criteria. The objective is to ensure that the production of bioenergy results in a real benefit in terms of CO₂ emissions avoided compared to fossil alternative, but also to guarantee that the production of bioenergy is not provoking irreversible damages to the environment. The EU took the lead in this aspect with the approval of the Directives EC 28/2009 and EC 30/2009 that make mandatory, for biofuels and bioliquids, the compliance with sustainability requirements including a minimum threshold for greenhouse gas emission (GHG) reduction and the designation of “no-go” areas where feedstock used to produce biofuels cannot be grown. Although sustainability requirements are less strict, the U.S. are also discussing a revision of the legislation – the Renewable Fuel Standard – that establishes threshold for biofuels GHG emission reduction that includes emissions related to indirect land use changes. In parallel to these mandatory requirements, voluntary sustainability schemes proliferate and are increasingly required by large purchasing companies.

To what extent these sustainability requirements represent a challenge for the trade in alternative energy?

First of all, we need to underline that the non-compliance with the mandatory sustainability schemes do not, *per se*, prevent the entrance of these products in the to enter the EU or the U.S. markets. However, products that do not comply with the requirements will be excluded *de facto* from these markets since they will not be eligible to receive fiscal incentives (excise tax reduction compared to fossil fuels) or to count toward the emission reduction targets of these countries. Second, it has to be mentioned that sustainability criteria apply to both domestic production of bioenergy and imports. There is no discrimination, at least on paper.

Having said that, sustainability requirements present challenges from a trade perspective, it is interesting to note that neither the EU nor the U.S. have notified their draft or adopted legislations on sustainability requirements for biofuels to the TBT information system. The lack of transparency on how the sustainability standards are established constitutes a real challenge for foreign producers and therefore for trade, and can lead to discrimination.

Article XX of the GATT provides WTO members with autonomy to determine their own environmental objectives. Two exceptions to the GATT rules are of particular relevance to the protection of the environment: paragraphs (b) and (g). Pursuant to these two paragraphs, WTO members may adopt policy measures that are inconsistent with GATT disciplines, but necessary to protect human, animal or plant life or health (paragraph (b)), or relating to the

conservation of exhaustible natural resources (paragraph (g)). However, the provisions of Article XX do not provide any guideline to assess whether human, animal or plant life or health need to be protected or not. No scientific or internationally accepted justification is required. While exhaustible natural resources are clearly established by international conventions and negative effects on health are well scientifically documented, no international conventions recommend to fully preserving all the forests and all the grasslands around the world as required in the EC directives. The absence of scientifically sound justification for prohibiting the use of some specific areas can lead to real discrimination, especially when these areas are located abroad. In fact, the “no-go” areas designated in the EU legislation are types of land located in tropical countries but almost absent of the European territory (wooded land of native species, wetland and peatland, grasslands).

The same argument applies to the methodology used to calculate the emissions of biofuels due to indirect land use change. This is one of the most controversial issues currently under discussion in the scientific community where no consensus has emerged. However, both the U.S. and the EU have developed their own methodologies and are ready to include them in their legislations. While there is no doubt that CO₂ release derived from land-use changes is a risk for the environment since it contributes to climate change, the first step consists in proving whether these emissions exist, what their magnitude is and to what extent they can be attributed to biofuels. In the absence of scientifically robust methodologies that can prove the causes and the effects, this kind of standard opens the door to the adoption of arbitrary measures to discriminate against some products.

In fact, sustainability criteria intend to discriminate against products and not countries. But the discrimination clearly exists since equivalent products in terms of end-use – in this case fossil fuels – are free of requirements. In addition, sustainability criteria only apply to ethanol or vegetable oil (in the case of biodiesel) to be used as a fuel. Industrial use and food and beverage applications of these products are exempted from such requirements while their production has exactly the same impact on the environment than if used as a fuel.

Finally, the proliferation of sustainability criteria, mandatory or voluntary, is counterproductive. Governments, large multinationals and multi-stakeholder fora are developing their own requirements in isolation. As a result, producers face a multitude of criteria to comply with, which proves extremely costly and burdensome from an administrative point of view. International cooperation in this field is absolutely necessary in order to harmonize the requirements and the implementation schemes aiming at the protection of the environment. Otherwise, markets for bioenergy will be extremely fragmented and bioenergy will never become a globally traded commodity. Moreover, some degree of national adaptation must be permitted. In the US-Shrimp case, the Appellate Body was of the view that rigidity and inflexibility in the application of the measure (e.g. by overlooking the conditions in other countries) constituted unjustifiable discrimination. Mandatory schemes, such as the EU directives, should provide some flexibility for national implementations in non-European countries.

Conclusion

Alternative energy, and especially ethanol, is not a globally traded commodity yet. The first condition for trade to develop is the existence of consuming markets, but markets are still limited to a few countries that rely on their own domestic production as a way to promote energy independence and to support rural areas. The existence of a market for alternative energy also relies heavily on the adoption of public policy to promote its use. First, because its production costs are often higher than for traditional fossil energy and second because the production of alternative energy is usually much more fragmented than the production of traditional fossil energies and their market power is totally asymmetric, especially when the latter are also the main distributors of energy. Asymmetries of conditions also apply to trade. Tough conditions, such as high tariffs and sustainability requirements, are imposed on trade in alternative energy but are not required from traditional fossil competitors.

If the world community is serious about reducing its dependency on fossil energy and its CO₂ emissions, a level playing field for trade in alternative energy shall be sought rapidly.

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