Challenges for the globalization of ethanol
By Géraldine Kutas and Mariana Regina Zechin

The world interest for biofuels is growing rapidly with more and more countries starting to produce and to use ethanol. The United States (U.S.) have adopted at the end of 2007 a very ambitious legislation mandating the consumption of 136 billion liters of ethanol by 2022; Colombia[1], Thailand and 10 Chinese provinces[2] have adopted a 10% mandatory blend (E-10); in India[3] the current percentage of ethanol mixture in petrol (gasohol) is 5% (E-5); anda directive to mandate 10% of biofuels consumption is currently discussed in the European Union (EU). According to the IEA[4], biofuels represented 49% of the growth in Non-OPEC oil supply in 2007 and this share is expected to rise to 55% in 2008. An upcoming IEA publication, Energy Technology Perspectives 2008[5], will show that biofuels may have to play a significant role if the world is to make meaningful reductions in carbon dioxide emissions. In the report's most ambitious scenario, advanced biofuels supply about 700 million tonnes of oil equivalent, representing 26% of total transport fuel demand, by 2050.

Despite the enthusiasm of many countries for biofuels, the international ethanol market remains small and volatile. In 2007, ethanol production amounted to 64 billion liters (an increase of 20% compared to 2006), but international trade only reached 6.6 billion liters. Brazil, as the world pioneer in the production of ethanol, remains the largest exporter, with 3.5 billion liters exported in 2007 to 44 countries[6]. However, Brazilian´s sales remain limited by high tariff and non-tariff barriers in developed markets (USD 0.54 per gallon + 2.5% in the US and €0.19 per liter in the EU). The preliminary data for the first semester of 2008 show that Brazilian exports have increased by 20% compared to the same period in 2007, mainly due to the competitiveness of the Brazilian ethanol compared with grain-based ethanol and to the skyrocketing prices of oil.

Brazilian ethanol exports by country of destinations. Million liters.

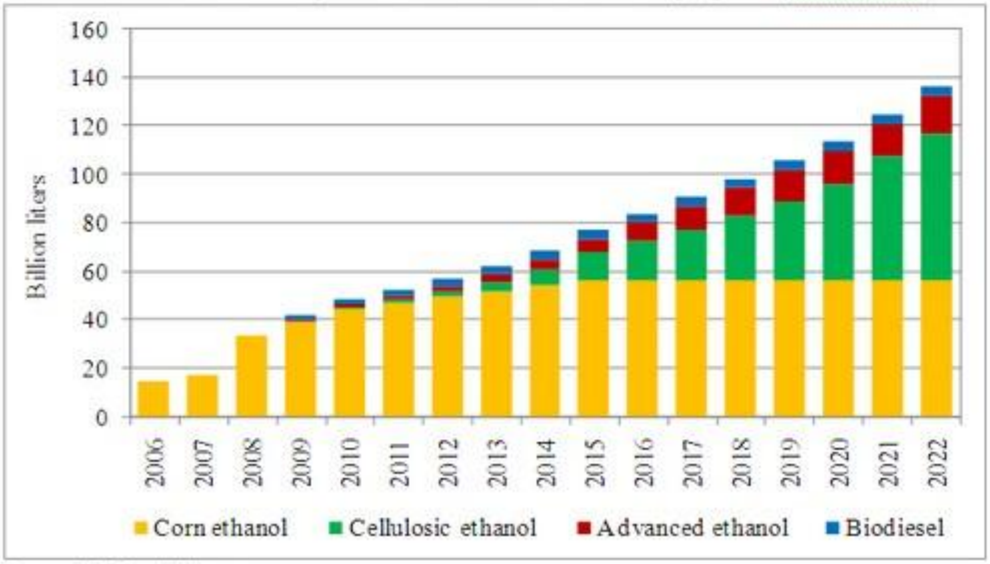
Country	2004	2005	2006	2007
European Union	384	535	582	1.008
U.S.A	425	261	1.749	850
Japan	223	318	228	367
Jamaica	134	135	133	312
El Salvador	29	149	183	227
Costa Rica	117	128	92	172
Trinidad and Tobago	7	36	72	160
Nigeria	108	120	43	124
South Korea	278	218	93	67
U.S. Virgin Islands	-	-	-	53
Others	*703*	*701*	*242*	*190*
Total	**2.408**	**2.601**	**3.417**	**3.530**

Source: Secex.

United States: an decisive step toward ethanol

The Renewable Fuel Standard (RFS), adopted in December 2007 as part of the Energy Bill, mandates an increasing consumption of ethanol rising from 34 billion liters in 2008 to 132 billion liters in 2022. The standard foresees the very rapid increase of corn-based fuel in the coming years (a 150% increase from 2007 to 2010), but then corn ethanol consumption will augment more slowly and will finally be capped at 56 billion liters. The remaining 76 billion liters that are due to be consumed by 2022 will have to come gradually from advanced cellulosic and non-cellulosic ethanol. The category "advanced non-cellulosic" aggregate ethanol that reduce greenhouse gases emissions by more than 50% and that is the case of sugarcane ethanol, opening a window of opportunity for Brazil.

Renewable fuel volume obligation as established in the RFS program. Billion liters.



Source: RFS Legislation.

Brazilian exports to the U.S. in 2007 decreased by 51% compared to 2006, but rose by more than 200% compared to 2005. 2006 was a very particular and non-representative year because of MTBE ban. In the first semester of 2008, the ethanol exports of Brazil to the U.S. reached 497 million liters – an increase of 10% compared to the same period of 2007.

Besides the direct export of ethanol to the U.S., the Brazilian industry uses the triangulation strategy with the Caribbean countries, members of the Caribbean Basin Initiative[7] (CBI), to access the U.S. market under better conditions. Under the CBI, countries in Central America and the Caribbean have had duty-free access to the U.S. for ethanol produce from regional feedstocks. Access for ethanol derived from non-regional feedstocks but re-processed in the CBI members has been limited to a quota equal to 7% of total U.S. ethanol consumption. Brazilian exports of ethanol to the CBI countries reached around 946 million liters in 2007; this amount is equivalent to 27% of Brazilian total exports last year.

The rush for ethanol provoked by the new RFS and the U.S. enthusiasm for ethanol (fuel ethanol consumption reached almost 26 billion liters in 2007 while the mandate was only 18 billion liters) together with other factors such as very high oil prices and adverse weather conditions, have put a lot of pressure on the corn market, contributing to a soar in corn world prices by nearly 25% since the beginning of this year.

The Farm bill approved in 2008 has reduced the tax credit for ethanol from 0.54 to 0.45 cents/gallon, but has maintained the secondary tariff paid by Brazilian ethanol at 0.54 cents/gallon. However, because of high gasoline and feedstock prices more and more consumers and productive sectors such as the meat and dairy industries are claiming for the reduction or elimination of the US tariff in order to provide relief to the corn market and provide cheaper ethanol to automobilists.

Is the European Union serious about biofuels?

The ethanol market is also developing in the EU, although more slowly than in the U.S. After 2 years of growth rate over 70%, EU fuel ethanol production increased by a modest 11% in 2007.

The EU ethanol fuel sector was confronted in 2007, and still is, with very high cereal prices (wheat and corn). Due to this the share of raw material in ethanol production costs went up to a level that made some production no longer profitable. A number of companies decided either to stop operating (temporarily) or delayed the start up of a new plant. But fuel ethanol consumption continued to increase reaching 2.7 billion liters in 2007 (an increase of 37% compared to 2006). This is mainly due to record imports mainly from Brazil. Almost 40% of fuel ethanol consumed in the EU in 2007 was imported from Brazil. Total Brazilian exports of ethanol (including industrial use and beverages) amounted to 1 billion liters (a 42% increase compared to 2006).

Future perspectives for biofuels consumption in the EU are still unclear. On one side, biofuels consumption is increasing because of high oil prices (to blend ethanol with gasoline is economically interesting for fuel distributors), and because some member states are providing incentives (mandatory targets, excise tax reductions, etc). But on the other hand, public opinion in Europe is becoming more skeptical about the benefits of biofuels because of the recent controversy about the competition between food and bioenergy and because of the potential risk of biofuels expansion for the preservation of biodiversity. In this context, the discussions of the proposed directive on renewable energy sources at the European Parliament and at the Council are extremely complex.

This directive will oblige EU member states to use 20% of renewable energies by 2020, out of which 10% will have to be used in the transport sector. The majority of this 10% is expected to be fulfilled by biofuels and this could represent a market for ethanol of approximately 22 bn liters. However, to respond to the criticism of the public opinion, the EU is conditioning the mandatory target for biofuels to the compliance with sustainability criteria. In the original proposal of the Directive released by the Commission in January 2008, 3 types of requirements for biofuels were established: a reduction of at least 35% of greenhouse gas emissions, no production in areas with high carbon stocks (forests and wetlands) and in areas of high biodiversity (forests, wetlands, preserved areas, and highly biodiverse grasslands).

However, the Parliament and the Council want to establish tougher requirements (including social criteria and risk adders for potential indirect land use changes) that in Brazil could limit the possibility to export ethanol made from sugarcane grown in former areas of cerrado or in properties that do not have the required areas of reserva legal. Although the same requirements should apply to both EU and foreign producers of biofuels, in practice, the current proposals are much more demanding for tropical and sub-tropical countries where the majority of the biodiversity of the planet is located. The directive should be approved by the end of this year and it is clear that the compatibility of the EU sustainability criteria with the rules of the WTO will play a crucial role in the final shape of this legislation, to ensure that it doesn´t turn to be a new non-tariff barriers.

Challenges

Much remains to be done to convert ethanol in a global commodity. Tariff and non-tariff barriers need to be eliminated, an international standard for ethanol specification must be adopted and an extensive work of information must be done to repeal the fallacious myths that are spread around the world about the alleged negative environmental and social consequences of biofuels. Over the last year, UNICA, especially through its offices abroad has been contributing actively to address these challenges, informing and engaging foreign policy-makers and consumers around the world.

NOTES:
[1]Ethanol blend of 10% is valid for 70% of the national territory.
[2]The provinces of Guangxi, Anhui, Henan, Liaoning, Jilin and Heilongjiang have introduced E-10 mandates.The provinces of Hubei, Jiangsu, Shandong and Hebei have gasohol mandates for larger cities
[3]India plans to introduce an E-10 mandate in October 2008.
[4]IEA statement on biofuels, available at:
http://www.iea.org/journalists/infocus.asp
[5]Available at: http://www.iea.org/journalists/infocus.asp
[6]European Union member states are counted separately.
[7]There are currently nineteen countries that benefit from the CBI program: Antigua and Barbuda, Aruba,
Barbados, Belize, Costa Rica, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, Panama, St. Kitts and Nevis, Saint Lucia, Saint Vicent and the Grenadines, Trinidad and Tobago, British Virgin Islands. El Salvador, Guatemala, Honduras, Nicaragua and the Dominican Republic recently signed a free trade agreement with the United States, named Central American Free Trade Agreement (CAFTA), but they retain existing CBI benefits on ethanol. For this reason, the volume of ethanol imported by these countries from Brazil was also counted during the calculation of Brazilian ethanol exports to CBI.

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