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# Outlook of the Sucrose-Energy Brazilian Sector

In several areas of the Brazilian and world economy, the sucrose-energy Brazilian sector navigates through a very difficult period. After more than two years of low prices for sugar and ethanol, the industry was impacted by the world financial crisis at the same time that it was investing heavily in the expansion of its capacity of production.

However, the economic fundamentals for the sector are kept solid and the medium to long terms perspectives are positive for the domestic market as well as the international market of sugar and ethanol. There are many opportunities that can be identified and that must be materialized in the future years to come.

In the internal market, there is no doubt that the great starter of the ethanol demand was the discovery of the flex vehicles. Before the year 2003, the ethanol consumption in this country, which was maintained in part due to the mixture of 25% of ethanol in all the gasoline commercialized in Brazil, was experiencing a progressive drop in function because of the scrapping of the vehicle fleet powered by ethanol. The appearance of the flex vehicles in that year, in conjunction with a competitive price of ethanol in most of the Brazilian States, inverted this tendency. Today the country consumes more than 1.8 billion liters of ethanol every month in the domestic market, a growth of more than 200% in only five years.

In medium terms, the increase of the flex fleet will continue to be the main factor for growth of ethanol consumption at the national market. Projections indicate that the flex fuel fleet, already surpasses 8 million units and represents 35% of the total fleet of automobiles and light vehicles of the country (excluding diesel vehicles), and shall reach almost 20 million vehicles by 2015, totaling 65% of the total fleet of light vehicles in circulation.

Besides the increase of the flex fleet, new uses for ethanol and even the sugarcane plant are coming and shall gain strength. One of them is the flex fuel motorcycle that, as in the vehicles, can operate with hydrated ethanol or gasoline. In March of this year, Honda Company released the first flex motorcycle sold commercially in the country and in the world and, in no more than four months, more than 60,000 units were sold. The expectation is that dissemination speed of this new technology will be similar to the one observed after the flex car introduction; that after less than three years they already represented around 80% of the new automobiles sold in the country.

Another new option of the biofuel use is the bus powered by

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# Perspectivas para el Sector Sacaroza Energetico Brasileño

Así como en diferentes áreas de actividad de la economía brasileña y mundial, el sector de sacarosa y energía brasileño pasa por un período muy difícil para las coyunturas. Después de más de dos años con precios bajos para el azúcar y el etanol, fue impactado por la crisis financiera mundial en un momento en que venia haciendo fuertes inversiones en la expansión de su capacidad de producción.

Por supuesto, los fundamentos económicos para el sector siguen sólidos y las perspectivas de mediano y largo plazo son positivas, tanto en el mercado doméstico cuanto en el mercado internacional de azúcar y etanol. Son muchas las oportunidades que pueden ser identificadas y que deben materializarse al decorrer de los próximos anos.

En el mercado interno, no hay dudas de que la gran propulsión de la demanda de etanol fue el aparecimiento de los vehículos Flex. Antes de 2003, el consumo de etanol en el país, que se mantenía en parte por la mezcla de 25% de etanol en toda la gasolina comercializada en Brasil, venia pasando por una caída progresiva en función del encogimiento de la flota de vehículos movidos a etanol. El aparecimiento de los vehículos flex en ese año, añadido a la competencia de precios de etanol en la mayoría de los estados brasileños cambio esa tendencia. Hoy el país consume por mes, más de 1,8 mil millones de litros de etanol en el mercado domestico, con un crecimiento de más de 2005 en menos que cinco anos.

A mediano plazo, el crecimiento de la flota flex debe continuar a ser el principal factor de crecimiento de consumo de etanol en el mercado nacional. Proyecciones sugieren que la flota de vehículos flex, ya sobrepasa los 8 millones de unidades y representa 35% de la flota total de automóviles y vehículos livianos en el país (excluidos los vehículos por diesel), debe llegar a casi 20 millones de vehículos en 2015, o sea 65% de la flota total de vehículos en circulación.

Además del incremento de la flota flex, nuevos usos para el etanol y para la propia caña de azúcar están surgiendo y deben de crecer. Uno de ellos es la motocicleta "flex-fuel" que así como los vehículos puede operar con etanol hidratado o gasolina. En Marzo de este año la empresa Honda, lanzó la primera motocicleta flex vendida en el país y en el mundo y en cuatro meses, más de 60 mil unidades fueron negociadas. La expectativa es que la velocidad de difusión de esta nueva tecnología sea semejante a la observada después de la introducción de los carros Flex, que en menos de tres años ya representaban alrededor de 80% de

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ethanol. A fleet of 600 buses operating on 95% ethanol and 5% of special additive are circulating in Sweden, 400 of them at the capital, Stockholm. With the support of UNICA, a bus of this type is in the experimental phase on the streets of Sao Paulo. In terms of emissions, the ethanol powered bus is highly advantageous in direct comparison with diesel. The vehicle, already meets the restrictions of pollution emissions established at the rule Euro 5, expected in Brazil by 2012 and also meets the requirements of more rigid rules, as the Euro 5 EEV, that for a time, depends on a volunteer enrollment in Europe and has no date for implementation in Brazil.

This way, the ethanol powered bus looks to be an excellent alternative for urban transportation in the big metropolis, where atmospheric pollution is more critical. One calculates that every 1000 buses of this kind is equivalent to the withdrawal from the streets of 20,000 gasoline powered cars in terms of emissions. With this prospective vision, the city of Sao Paulo approved in June this year, the City Policy of Weather Change, that foresees, in other aspects, the gradual use of renewable fuels for all buses of the public transportation system of the city so as to eliminate all fossil fuels by 2018.

Besides the ethanol powered busses and flex motorcycles, in the coming years we shall observe the increased use of ethanol for the manufacture of bioplastics and in aviation, besides the use of sugarcane as raw material for the production of second generation ethanol, diesel and gasoline.

At this point, we can point to the increasing production and sales of surplus bioelectricity produced at the sugar mills of the country from the burning of sugarcane bagasse. Until recently, around two thirds of the primary energy contained in the sugarcane, bagasse and trash, were used in an inefficient form by the companies. This is changing rapidly and the bioelectricity should be consolidated as a new and important product of the sector. It is estimated that the sector can provide around 14% of the electrical energy needs of the country by 2020.

In the international market, ethanol has all the qualities to be used as a freely commercialized global energy commodity. The world, that for decades depended preferentially on highly polluting energy sources, mainly coal after the industrial revolution and more recently on oil, shall go to a process of diversification of the energy matrix. Ethanol will rise as one of the available solutions that generate immediate results. Contrary to some technologies that still depend on many years of development and frequently at prohibitive costs, ethanol is an immediate option for oil replacement with economical viability and advantages from the environmental point of view because it is a clean and renewable option, with enormous potential to decrease gas emissions that cause the greenhouse effect.

In this sense a series of countries already are adopting demanding policies of mixing ethanol into their gasoline, while others are starting to seriously examine ethanol as a highly viable option for replacement, at least partially of the fossil fuels. With that, the consumption and the world's production of the product might increase in the coming years, bringing perspectives so as this market develops in a more accelerated form.

Different from ethanol, the sugar market is already well consolidated and it is configured as one of the more developed among the agriculture commodities, in spite of the tariff barriers imposed by several countries to the importation of sugar. In this year, Brazilian exports are being scaled up by a world sugar deficit, which also is pushing the price of the product. During the first semester of 2009, Brazilian sugar exports established a new record, reaching more than 10 million tons shipped to all continents.

This situation must be maintained in the next months in response to the reduction of production in several countries that before strongly contributed to the world supply, as is the case with India. It is important to mention that production flexibility is another competing advantage of the Brazilian industry. Within certain limits, the producing units can make an option to increase sugar or ethanol production according to the market conditions.

Along with the positive perspectives comes a series of challenges that will need to be faced by the sector in the coming years. In the internal market, there will be a need to improve the process of commercialization of ethanol, inside a medium- long term planning that will preserve or even amplify the renewable content of the energy matrix of the country. In the international market, it is evident that there is a need to fight against the myths and prejudices that are still used against the sector, harmonize the ethanol specifications, give incentives to the production and consumption in a larger number of countries and reduce or eliminate the several commercial barriers imposed over the product.

Transforming the promising perspectives in concrete reality is an enormous challenge that requires efforts and coordination of all that are directly or indirectly involved with the Brazilian sucrose energy sector. SJ

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