



International Sugar Organization

1 Canada Square

Canary Wharf

London E14 5AA

**MARKET EVALUATION CONSUMPTION
AND STATISTICS COMMITTEE**

ISO STUDY - PRESS RELEASE

MECAS(09)05 - Cogeneration – Opportunities in the World Sugar Industries

A survey of already installed cogeneration capacity in the sugarcane processing sector as well as existing development plans shows that bagasse-based production of electricity for export to the national grid is fast becoming a major activity of sugar mills. An increasing number of mills in a growing number of countries are already involved or are planning to start in the near future electricity production in excess of captive consumption. A review of the current situation and prospects for cogeneration in 13 countries in Africa, Asia, Latin America and Oceania shows that the scope for efficient, competitive and environmentally friendly electricity production could be sizeable. In technical terms, the amount of energy that can be extracted from bagasse is largely dependent on two main criteria: the amount of processed cane and the technology used for energy production. Crucially, only the use of high-efficiency boilers generating extra high pressures and temperatures allows production in excess of the captive consumption of a mill. The cost of boilers and their installation is relatively high but, as shown by projects in Brazil and Thailand, capital investment costs may be recovered by revenues from electricity exports to the national grid in a period not longer than 5 years. On the other hand, the success of cogeneration by sugarcane mills is fully dependent on the existing legal framework and the prevailing electricity market rules. Firstly, the electricity generation and supply to the national grid has to be allowed for sugarcane mills. Secondly, prices paid to mills by the utility company have to be adequate. Power Purchasing Agreements have to be long-term. The legal framework has to ensure fair and easy access to the grid for sugar mills. To kick-start the process in the sugar industry financial and tax incentives in line with incentives offered for other generators of renewable energy are of great importance. Financial aid from national and international development agencies is particularly important in the time of the global credit crunch, when normal commercial financing is rarely available or too expensive. A separate challenge being addressed is unavailability of bagasse fuel out of season. Electricity distributors and consumers are most interested in an uninterruptible (firm) supply throughout the year. Taking into consideration the high seasonality of sugarcane harvesting and processing, such continuity is hardly achievable if power generation is solely bagasse-based. This inherent bottleneck is now being increasingly resolved by enabling boilers to co-fire fossil fuels in the intra-crop periods. Better utilization of non-bagasse biomass as a renewable fuel may provide a long term solution. The full use of cane trash potential in power generation in future, when the proper technology is finally developed, seems particularly promising.



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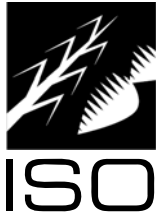
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MECAS(09)06 - Outlook on Brazil's competitiveness in sugar and ethanol

This paper reviews the Brazilian sugar cane production and processing sector as well as the drivers impacting the country's competitiveness in the world market for sugar and ethanol. The paper concludes that Brazil will retain and consolidate its cost-competitiveness in the world market of sugar and ethanol following a favourable combination of agricultural and industry efficiency indicators and world market conditions. First, large scale sugar and ethanol production, with relative returns determining a variable sugar/ethanol split, is a fundamental comparative advantage of Brazil's cane industry. The vast majority of cane is planted and harvested by the mills themselves, rather than by independent growers, in a model that reinforces gains from economies of scale. In the Centre-South region, one third of all cane processing takes place in mills crushing more than 3 mln tonnes a year each. Moreover, gross income per hectare in sugarcane growing is the second highest among a selected group of crops directly competing for land in Centre-South Brazil, at an estimated USD 1,600 per hectare.

In addition to gains on the agricultural side, there has been significant improvement in productivity gains in industrial processing as a result of technology advances and synergies in ethanol/sugar/cogeneration production. For the future, substantive productivity gains are expected when bagasse is used for ethanol manufacturing as well as trash for ethanol production and electricity co-generation. In spite of the credit crunch, a strong level of inflow of foreign direct investment in the Brazilian sugarcane industry, resulting in access to cheaper credit, combined with a fastly consolidating industry via mergers and acquisitions, is likely to continue to give Brazil an additional edge over other market players in the short to medium term. Over 20 foreign groups participate in cane crushing in Brazil today, up from none a decade ago. Ethanol and sugar production costs are among the world's lowest, estimated at a respective USD 0.35/litre and US 12 cents/lb. Furthermore, several projects on the expansion of the country's transport infrastructure and logistics bode well for the long-term cost-competitiveness of the industry, although over the short term costs may increase due to the lumpy nature of the investments. On the global sugar market front, Brazil has been benefiting from a relatively long-term trend of high white sugar premiums combined with lower freight rates for bulk sugar. On currency movements, Brazil has enjoyed a long period of exchange rate competitiveness relative to other major exporters. Finally, Brazil may double its fuel ethanol exports to 2015, due to a fast-increasing global ethanol trade, to reach around 10 bln litres. This will be the world's largest estimated export availability of fuel ethanol and equivalent to 17 mln tonnes of sugar.



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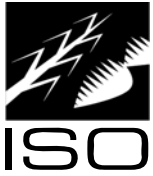
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MECAS(09)07 - Sugarcane ethanol and food security

Sharp declines in world prices for food commodities and energy during the latter part of 2008 marked the end of a five-year commodity boom, made exceptional by its duration, the number of commodities involved, and the heights that prices reached. In terms of food security, the sharp rise in food prices during 2007 and 2008 caused severe hardship and suffering in low-income, net food importing countries. In short, the 5 year commodities boom had boosted retail prices for food in many countries to the point that concerns arose that the world risked transitioning into a phase of commodity scarcity – as well as to further inflame an increasingly emotive food vs fuel debate over the use of food crops for liquid bioenergy.

In this study the question of the extent, if any, to which sugarcane ethanol contributed to food price escalation is conducted using a 'top-down' approach. First, the recent commodity cycle is reviewed and assessed – its duration and severity, and how it led to perceptions of an escalating food security crisis via food inflation. The drivers behind the price escalation are then identified. A broad understanding of the commodity price cycle then allows the key question of biofuels and their impact on the observed food price escalation to be assessed. Whilst the relative role of biofuels to food price escalation is difficult to disentangle from the other drivers, attention is focussed on the disparate impacts of biofuels production using grains as opposed to sugarcane. Evidence is compiled of a strong link between increasing diversion of corn to ethanol production and higher average world corn prices than would otherwise be the case. However, in the case of cane ethanol evidence is collated that suggests the links between increasing use of cane – chiefly in Brazil – is not impacting on sugar prices or food prices generally. This is chiefly because biofuels production from sugar cane in Brazil is lower-cost than biofuels production in the US or EU and has not raised sugar prices significantly because sugar cane production has grown fast enough to meet both the demand for sugar and ethanol.



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