



Cane for sugar, ethanol and bioelectricity: a global commodity

By Marcos Jank

Over the last three decades, the Brazilian sugarcane industry has been the target of heavy investments in science and technology from both the public and private sectors. Today, sugarcane is the basic feedstock not only for sugar, but for an impressive and growing variety of added value products, particularly the ethanol that fuels an increasing percentage of Brazilian automobiles and helps to reduce the dominant position held by fossil fuels in our society.

Now, sugarcane is about to embark on a new leap forward, this time to offer the world a dual source of clean and renewable energy. Reaching beyond sugar and ethanol, cane is already supplying electricity in Brazil, at a time when it is urgently needed to guarantee momentum for economic growth.

Brazilian ethanol produced from sugarcane is not only economically profitable: it is also environmentally consistent. Thanks to efficiency gains, the current price of ethanol in Brazil sits at about 30% of what it was three decades ago, when the government decided in favour of the large-scale use of ethanol. Today, Brazilian sugarcane ethanol is competitive with gasoline when petroleum is at US\$ 70 a barrel. This makes our brand of ethanol feasible without government subsidies.

We have now moved to bioelectricity, which is also being produced from sugarcane biomass. This is a solution that could well set off another revolution on the same scale as what has happened with ethanol. Bioelectricity is produced by burning the byproducts of sugarcane in boilers to produce steam that generates power. These byproducts are the bagasse, or what's left after the cane is crushed, and the straw, which must be removed from the cane before crushing.

For decades, electricity has already been produced in this way at Brazil's sugar and ethanol plants, making all 370 existing plants 100% self-sufficient. What is happening now is the next step, or the expansion of what is already in place, so that surplus electricity generated by the plants can be sent directly to national distribution grids.

Until recently, about two-thirds of the sugarcane's energy potential, contained in the bagasse and the straw, were under-utilized. This is changing dramatically now, with sugar and ethanol plants in Brazil already generating some 1,800 average megawatts in surplus electricity, or the equivalent of about 3% of the country's overall needs. And as the use of biomass from sugarcane in this way intensifies, and high-efficiency boilers are introduced, it is estimated that the sugarcane industry's generating capacity could reach 15,000 average megawatts by 2020. This would be enough to supply up to 15% of Brazil's total electricity needs, or the equivalent of what is consumed by entire countries such as Sweden or Argentina.

For all of these reasons, we believe that sugarcane ethanol is clearly ahead of ethanol produced from other feedstocks, whether the comparison is made in terms of energy balance, environmental efficiency, productivity or cost-benefit. This is why its production and use should be expanded and its unfettered international trade encouraged.



Sugarcane ethanol and its bioelectricity solution are certainly not what one could call national solutions, peculiar to Brazil. More than 100 countries, including the United States, currently grow sugarcane around the world and most are emerging economies in tropical and sub-tropical regions. Adoption by these countries of sugarcane ethanol to at least partly replace gasoline would increase energy independence and energy security, particularly for countries that import ethanol since the number of suppliers would be expanded and diversified.

In this scenario, 100 mostly developing countries could be supplying biofuels to the world instead of the 20 major oil-producing countries that do so today, considering that most oil suppliers are in troubled regions of the world. Sugarcane, therefore, can certainly make a significant contribution to economic development in many countries by transforming them into ethanol producers and exporters.

Sugarcane ethanol fulfils all of the prerequisites in order to become a global commodity, but for that to happen, developed countries must push aside the distorted logic that prevails today. A logic that applies tariffs to biofuel imports, but allows fossil fuels to flow freely around the globe, without facing tariffs or trade barriers of any kind.

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