

THE BIOFUELS SECTOR IN BRAZIL: ETHANOL & BIODIESEL

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The Brazilian energy matrix is diverse and over the last decades there has been a concerted effort to diminish Brazilian dependency on foreign petroleum. Traditionally, an important source of energy in Brazil has been hydroelectricity. However, recent data shows that while hydroelectric power accounts for approximately 15% of the Brazilian energy matrix, sugarcane derived energy now accounts for approximately 18%, showing the growing importance of biomass-based energy for the country. In a world context, while 11% of the world energy matrix is based on biomass, this number is approximately 32% in Brazil.

Sugarcane, a C4 plant, is highly efficient in carbon fixation and is well adapted to grow under the conditions available in Brazil. Prices for Brazilian ethanol derived from sugarcane are competitive when compared to those from other countries and also are lower than those derived from other popular feedstocks, such as corn and wheat. The Federal government has made an effort to implement public policies for the biofuel sector. A number of investments to support biofuel-related research have recently been made. There has also been a lot of activity regarding the negotiation of agreements between Brazilian companies and foreign institutions. Many Brazilian sugarcane mills have adopted a biorefinery model where co-products are generated increasing business sustainability. New uses for sugars derived from biomass other than ethanol production are being developed and this will likely increase the importance of sugar in the world economy in the future.

Brazil is now the 4th world producer of biodiesel. Biodiesel use has a number of environmental and social advantages. Currently in Brazil, biodiesel is produced mainly from soybean oil. However, a number of different oil crops such as dende and babassu are regional alternatives that can be used for biodiesel production. Ongoing research should increase crop productivity and make the biodiesel business more attractive by offering the possibility of generating co-products for these alternative oil crops. An important step to ensure that biodiesel will increase its participation in the Brazilian market is a mandatory mixture of increasing levels of biodiesel into petroleum derived diesel, currently at 5%.

With large experience in agriculture and new potential areas that can be used for biomass production, whether for ethanol or biodiesel production, Brazil has so far played an important part in the world biomass-based biofuel scenario. It is likely that Brazil's role will expand in future as both a provider of biofuel-related commodities as well as new technologies.