

THE BRAZILIAN STRATEGY FOR BIOETHANOL

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The first intervention in the production of ethanol in Brazil was already in the early twentieth century with the 2% addition of ethanol into the gasoline. During these early decades, however, there was no concern with environmental impacts, including greenhouse gases. The main objective was national self-sufficiency/security in relation to fuels that were previously imported. The reason for this initiative was simply to create a buffer for the sugar sector, which absorbed excess production of sugar by converting it into ethanol. Although this percentage had grown slowly, even before the advent of the National Alcohol Program (Pro-Alcohol), a clear strategic only came to interfere later on. With the steep increase in international prices of oil dependency in Brazil, which was at the time of more than 80%, has become an excessive economic burden.

Concomitantly with the reversal of national policy for the oil that previously intended to protect our crude oil reserves for the future, turned interested to seek an increase in domestic production, was then deployed the National Alcohol Program. With the beginning of the Pro-Alcohol increased to 10% the participation of ethanol in gasoline and passenger car engine with ethanol were encouraged. However, at that time the only strategic concern was to reduce national dependence on oil.

Although some scientists knew the greenhouse effect since the nineteenth century, even in the academic world there was no perception of the

importance of CO₂ emissions to the atmosphere. Nor was it taken into account any other consequence of an ecological nature of the use of fossil fuels or organic. More recently some steps taken by the government during the Fernando Henrique Cardoso and Luiz Ignacio Lula da Silva, may be considered as embryos of a future strategy. At first, initiatives related to the progressive reduction of open burning, early preferential financing of efficient production systems in particular with respect the cogeneration and better use of bagasse. Brazil has also sought to promote ethanol production in other countries with the aim of reducing the aversion to dependence on Brazilian ethanol, shown prematurely by future possible importers.

Although quite shy, the Ministry of Science and Technology has supported studies and integrated planning to increase production of ethanol. They have also been supported by studies on the full use of the cane, including the creation of a research center of bioethanol. Simultaneously, several aspects of sustainability have also been supported by the Ministry of Science and Technology.

Although the Government's attitude has been, with respect to ethanol production, mainly of a "laissez-faire", the studies conducted by the MCT has had consequences in the private sector and one of them is the perception that logistics is essential for production, not only economic and energy efficient, but also socially and ecologically positive. The concept of "clusters" came to be central to this perspective.

CLUSTER

The cluster concept is quite simple and follows from the fact that the transportation of ethanol is much cheaper using pipeline than by any other means of transport. However, this is true, of course, for large volumes. These two conditions require the clustering of plants around a collection point of ethanol. To make the ethanol economically viable is therefore necessary a minimum number of plants forming a “cluster”. This would have the added advantage of being also socially beneficial, since according to the mentioned project, the cluster would contain about 200,000 inhabitants, which would facilitate the implementation of a socially important infra-structure composing a number of schools of all levels to universities and hospitals, and recreation. From the point of view of sustainability the cluster is highly desirable as it would reduce energy costs and contain the expansion of sugarcane cultivation in areas previously considered.

The project in question has also proposed a specific zoning for the production that take into account the distribution of wealth in the country, the preservation of important ecological succession and the implementation of investment that would be suitable for the country.

This study also provides for the elimination of manual harvesting and consequently the burning, which are certainly extremely damaging to the environment. Also included is the production

of electric energy cogeneration and adoption of high-pressure boilers for better use of bagasse. In parallel with this project has also prepared a study on the optimum use of bagasse and straw (trash) by hydrolysis, also under the aegis of the Ministry of Science and Technology. The same group from Unicamp, in collaboration with various universities and research centers in Brazil, has been studying measures to improve productivity in the Northeast and Rio de Janeiro, now considered in decline.

However, all this does not means that Brazil has established a strategy or even on to the fuel ethanol and the main reason for this is that unlike what is happening in other areas of energy, the production of ethanol refers to the various ministries. Initially the Agriculture because sugarcane is a crop, the Ministry of Mines and Energy because fuel ethanol is an energy, the Ministry of Development, Industry and Foreign Trade because it is an industrial product, the Ministries of Economy and Planning for may soon become a commodity and so on. This caused the federal government to take a disastrous decision by deciding to centralize the studies in the Office of the President who does not have the necessary expertise. It is a ministry that works in the Policy Sector and is overwhelmed with a multitude of tasks. This excessive centralization and obvious technical inadequacy prevent any attempt at elaboration and adoption of a strategic or even a single development plan for the ethanol industry.

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