

## **TENTH EDITION OF ANALYSIS OF BIOFUELS' CURRENT OUTLOOK -**

### ***Commemorative Edition***

EPE presents its tenth edition of Analysis of Biofuels' Current Outlook, bringing the most relevant facts occurred in 2018.

The main topics of the document are: supply and demand of ethanol and its production and transportation infrastructure, and the participation of biomass in the electric national matrix and the biodiesel market. In this 10-year commemorative edition, the article addresses the role of biofuels in the national energy matrix over the last decade, reporting on the key public policies adopted and their effects on the Brazilian domestic energy supply, as well as the benefits derived from the adoption of these renewable sources.

The 2018 highlight were the ethanol and biodiesel production record, reaching 32 and 5 billion liters, respectively. Also noteworthy to mention is the regulatory actions for the implementation of RenovaBio.

This edition shows that the combination of several factors led to a rearrangement of the sugar-energy production in 2018. The sugarcane harvest area decreased 1.6% when compared to the previous, reaching 8.6 million hectares. The average age of sugarcane crops remained high, with prospects for further improvement for the next harvest. The average agricultural productivity remained stable at 72.2 tons of sugarcane / ha in the 18/19 harvest, and combined with the downsizing in harvested area, reduced the total amount of sugarcane to 609 million tons, 4.3% less than the year 2017. On the other hand, the yield increased 2.7% to 138.2 kg Total Recoverable Sugar (TRS) / tons of sugarcane in the 2018/19 crop.

Changes in the sugar and ethanol market boosted TRS allocation to ethanol, from 54% to 65% of the share. The drop in the average sugar price in the international market, due to the surplus in the world balance, reduced the attractiveness of Brazil production, which fell 25%, reaching 28.5 million tons. In contrast, ethanol production presented a historical record, totaling 32.3 billion liters, a significant increase of 17% over the previous year. Regarding the international market, ethanol imports reached 1.8 billion liters, compared to 1.7 billion liters in exports, with Brazil remaining as a net importer.

The chapter dedicated to ethanol demand shows that 2.5 million new light vehicles were licensed in Brazil in 2018, 13.8% higher than in 2017. The Otto cycle's total energy demand for light vehicles in 2018 showed a 4% decrease over the previous year, reaching 52.4 billion liters of gasoline equivalent. The flex fuel vehicles share in the national light vehicles fleet was 76.4% in 2018.

The gasoline C price for consumer increased by 16.8% in 2018, which pushed the hydrous ethanol average price by 8.9%. As a result, the average price ratio EP/GP<sup>1</sup> was 66%, considered favorable to ethanol consumption and the lowest ratio since 2011.

In the bioelectricity chapter, the amount of energy injected by sugarcane power plants in the National Interconnected System – SIN<sup>2</sup> in 2018 was slightly higher than in 2017 (1.6%), totaling 2.5 GWmed. Other biomass were responsible for the injection of 560 MWmed.

Concerning Biodiesel there was a 2 percentage point increase in the mandatory volume to diesel, reaching the 10% level in March 2018, with the second record in consumption, reaching 5.4 billion liters, an increase of 26.7% compared to 2017. The consolidation reports of B10 and B15 mixtures validation tests were published.

Regarding new biofuels, the global implementation of lignocellulosic ethanol commercial production (E2G) continues at a slow pace. Other advanced biofuels (such as HVO and Biojet Fuel) have received increasing attention.

Avoided emissions by the use of ethanol (anhydrous and hydrated) and biodiesel, compared to fossil equivalents (gasoline and diesel), was 63.7 MtCO<sub>2</sub> in 2018, adding up to 2.6 MtCO<sub>2</sub> from bioelectricity.

In 2018, several structuring actions were carried out for implement the National Biofuels Policy (RenovaBio), such as the establishment of the national emission reduction target and the regulation of the Biofuels Efficient Production Certificate.

The current outlook ends this commemorative edition with the article "The role of biofuels in the national energy matrix". In this section, is highlighted Brazil's outstanding position in the world regarding the renewables' high participation in its energy matrix. The study reports the main public policies and how they reflected in the national energy supply, the benefits derived from the renewable sources adoption and how their contribution could be fundamental so that the energy transition in Brazil occurs with the due appropriation of our national wealth.

The tenth edition of Analysis of Biofuels' Current Outlook is available at EPE's web site: **[www.epe.gov.br](http://www.epe.gov.br)**.

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<sup>1</sup> EP/GP – Ethanol prices / Gasoline prices.

<sup>2</sup> SIN –National Interconnected System, which allows the electricity transmission in Brazil, including the South, Southeast, Center-West, Northeast and part of North region.