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Fuel of the Future Law

INTRODUCTION

On October 09, 2024, Law No. 14.993/2024 (the Fuel of the Future Law) was published in the Official Gazette. The Fuel of the Future Law addresses several topics such as sustainable low-carbon mobility and the capture and geological storage of carbon dioxide, and provides for different programs, including the National Program for Sustainable Aviation Fuel (ProBioQAV), the National Green Diesel Program (PNDV), and the National Program for Decarbonizing Natural Gas Producers and Importers and for Incentives to Biomethane.





BACKGROUND

Despite the significant market share and use of biofuels in the energy mix in Brazil, the transportation sector is still responsible for a significant share of greenhouse gas (GHG) emissions, indicating the need for a joint approach and to integrate existing government programs, such as the National Biofuels Policy (RenovaBio) created in 2017, and the Vehicle Air Pollution Control Program (Proconve) created in 1986.

In this context, Brazil's National Energy Policy Council (CNPE) created the Fuel of the Future Program by means of CNPE Resolution No. 07/2021, resulting in the publication of the Fuel of the Future Law. The Fuel of the Future Program was conceived with the goal of harmonizing Brazil's GHG mitigation policies, in order to increase the use of sustainable and low-carbon fuels, decarbonize the energy mix used for transportation and increase the energy efficiency of vehicles. The program keeps with the 2021 identification of Brazil as the leading country in the "Energy Transition" category at the United Nations' High-Level Dialogue on Energy.

The Fuel of the Future Technical Committee (CT-CF) was established and appointed to carry out necessary studies and propose measures to increase the use of sustainable fuels in all means of transportation.

THE CT-CF AIMS TO PROPOSE:

Measures for integration between RenovaBio, Proconve, the National Program for the Production and Use of Biodiesel (PNPB), the Rota 2030 Program, the Brazilian Vehicle Labeling Program (PBE Veicular), and the National Program for the Rationalization of the Use of Petroleum Derivatives and Natural Gas (CONPET), among others;

Measures to improve fuel quality, reduce the average carbon intensity of the fuel matrix and transport emissions, and increase energy efficiency;

A methodology for evaluating the entire supply chain (well-to-wheel) in order to evaluate emissions from various modes of transportation, including emissions associated with the manufacture of vehicles;

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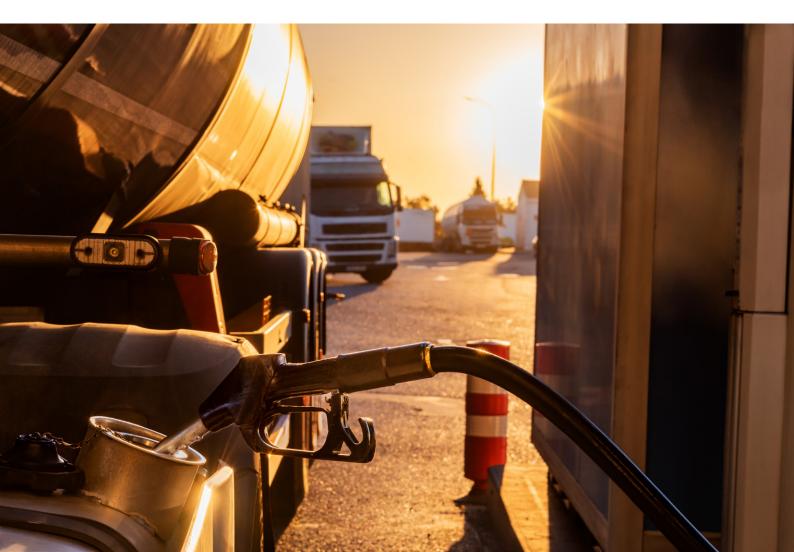
Studies to evaluate the possibility of bringing the reference fuels closer to the fuels actually used, taking into account the maintenance of the deadlines established by Proconve;

Studies to expand the use of sustainable and low-carbon fuels.

The CT-CF was composed of representatives of 15 government entities:

- Ministry of Mines and Energy (MME), which serves as the CT-CF's coordinator;
- Civil Office of the Presidency of the Republic;
- 3. Ministry of the Economy;
- 4. Ministry of the Environment (MMA);
- 5. Ministry of Infrastructure (MINFRA);
- 6. Ministry of Agriculture, Livestock and Supply (MAPA);
- 7. Ministry of Foreign Affairs (MRE);
- 8. Ministry of Science, Technology and Innovation (MCTI);

- Ministry of Regional Development (MDR);
- 10. Brazilian Navy;
- 11. National Agency of Petroleum, Natural Gas and Biofuels (ANP);
- 12. National Civil Aviation Agency (ANAC);
- 13. Energy Research Company (EPE);
- 14. Brazilian Institute of the Environment and Renewable Resources (IBAMA); and
- 15. National Institute of Metrology, Quality and Technology (INMETRO).



Due to the diversity and complexity of the objectives determined by the CNPE in 2021, the CT-CF established technical subcommittees, eminently technical bodies comprised of government, industry and academic representatives.

TECHNICAL COMMITTEE – FUELS OF THE FUTURE	
SUBCOMMITTEES	INITIATIVES
Otto Cycle	 Focus on high-octane, low-carbon fuels (aiming for emissions reduction and increased energy efficiency). Promoting large-scale adoption of second-generation ethanol (positioning ethanol as a commodity). Encouraging the development of ethanol fuel cells (hydrogen mobility).
ProBioCCS	• Development of a legal and regulatory framework for carbon capture and storage (CCS) technology.
Maritime Fuels	• Assessment of sustainable fuels for maritime transportation.
ProBioQAV	 Evaluation of the integration of BioQAV into the country's transportation fuel mix. Creating an integrated policy for the production of BioQAV, green diesel (Hydrotreated Vegetable Oil - HVO), and renewable naptha.
R&D	 Proposing measures to encourage O&G operators to invest in initiatives of the Fuels of the Future Program.
Synthetic Fuels	 Assessment of potential legal and regulatory barriers to decentralized fuel production. Evaluation of the inclusion of synthetic fuels under the RenovaBio program.

THE FUEL OF THE FUTURE LAW

The Fuel of the Future Law was discussed under Bill of Law No. 528/2020. After being approved by the House of Representatives and the Senate, the text was passed by the President of the Republic in October 8, 2024. The law does not outline specific treatment for aviation, maritime and road fuels, allowing each sector to adopt different decarbonization methods suitable for the industry.

Below are the main aspects of the Fuel of the Future Law:



INTEGRATION

The initiatives and measures adopted within the scope of RenovaBio, the Mover Program, PBEV and Proconve must occur in an integrated manner, in order to promote sustainable low-carbon mobility. The integration between RenovaBio, the Mover Program and PBEV will be carried out by adopting the life cycle analysis methodologies below with the aim of mitigating CO2e emissions with better cost-benefit:

UNTIL DECEMBER, 2031: WELL-TO-WHEEL CYCLE

Accounts for GHG emissions from the processes of cultivating and extracting resources and the production of liquid or gaseous fuels or electrical energy and their distribution and use in light and heavy passenger and commercial vehicles.

AS OF JANUARY, 2032: CRADLE-TO-GRAVE CYCLE

Accounts for GHG emissions incorporated into the well-to-wheel cycle, plus those generated from the extraction of resources and the manufacture of auto parts, as well as the assembly and disposal of light and heavy passenger and commercial vehicles.

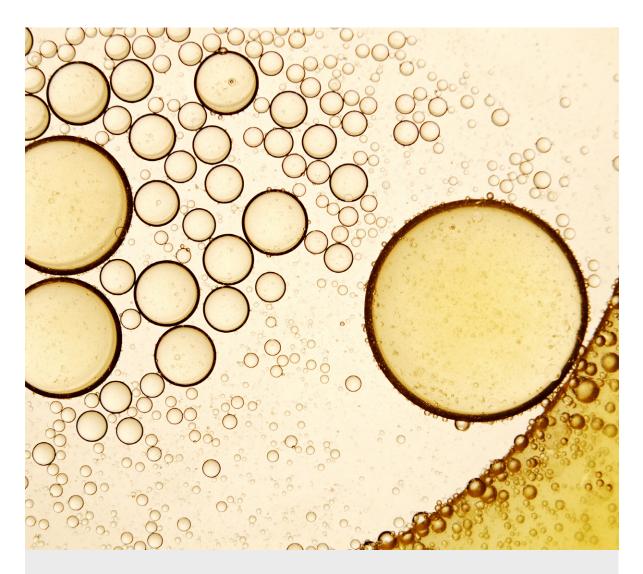


NATIONAL GREEN DIESEL PROGRAM

The Fuel of the Future Law establishes the ProBioQAV, to encourage the production and use of Sustainable Aviation Fuel (SAF). This program requires airline operators to gradually reduce carbon dioxide emissions, starting with a 1% annual reduction beginning in January 2027, and reaching a 10% reduction by January 2037. This reduction is expected to be achieved by increasing the percentage of SAF blended with fossil aviation kerosene, although alternate means to meet the targets may be used.

The ANAC will be responsible for defining a method to verify if the targeted reductions are achieved, as well as for inspecting air operators. Compliance with the targeted reductions may be waived for air operators (i) with annual carbon dioxide emissions lower than the amount defined by ANAC; or (ii) without access to SAF at their respective airports.

Moreover, obligations imposed by foreign countries to national air operators relating to the use of SAF may be extended to international flights passing through the national territory, based on the principle of reciprocity, upon determination by the CNPE and regulation by ANAC.



NATIONAL GREEN DIESEL PROGRAM

The Fuel of the Future Law also creates the National Green Diesel Program (PNDV), as part of the effort toward energy transition and the reduction of external dependence on petroleum-based diesel, by gradually incorporating green diesel into the country's fuel matrix.

To define the mandatory percentage of addition to fossil diesel, the CNPE will evaluate the product's supply conditions, including the availability of raw materials, capacity and location. CNPE must also consider the impact of the mandatory minimum addition on the price to the end consumer and the competitiveness of domestically produced green diesel on international markets.



ACTIVITIES RELATED TO CAPTURE AND GEOLOGICAL STORAGE OF CARBON DIOXIDE

Another way the Fuel of the Future Law contributes to the energy transition is by proposing a regulatory framework for Carbon Capture and Storage (CCS) related activities.

Under the law, ANP is responsible for regulating and authorizing carbon capture, pipeline transportation, and the geological storage of the product. Such authorization may be obtained by Brazilian companies and consortiums, and will be valid for 30 years, subject to a 30-year extension. The specific rules to apply for a CCS authorization will be issued by ANP.

In cases in which it is impossible to simultaneously carry out (i) carbon storage activities and (ii) E&P or mining activities, the Fuel of the Future Law indicates that the Ministry of Mines and Energy will be responsible for selecting which activity should be prioritized.

Notably, the Fuel of the Future Law does not regulate carbon injection and storage activities carried out under concession, production sharing, or transfer-of-rights regimes, for purposes of enhanced oil recovery.

FUEL BLEND

Biodiesel in diesel oil: The law establishes targets of biodiesel addition, starting at 15% in March 2025, up to 20% in March 2030. The CNPE will be in charge of assessing the feasibility of such targets and setting forth the applicable mandatory addition percentage between 13% and 25%. A mandatory percentage above 15% requires verification of its technical feasibility.



Anhydrous ethanol in gasoline: The law establishes a 27% mandatory addition. This amount may be increased by the Executive Branch up to a maximum of 35%, subject to verification of its technical feasibility, or reduced to a minimum of 22%.



The measure is also relevant because ethanol contributes to reducing the price of gasoline for consumers.

TAX ASPECTS

The Fuel of the Future Law does not contain specific tax provisions. The production and commercialization of SAF, E-Fuels and Carbon Certificates engaged in CCS activity will follow the provision of other laws currently in force.

Taxation of SAF and e-fuels may vary depending on the technological process used, places of production and consumption, and the business model adopted. Tax incentives may become available based on these characteristics, such as the Special Incentive Regime for Infrastructure Development (REIDI) (Law No. 11.488/2007), favorable tax treatment for Export Processing Zones (Law No. 11.508/2007) and Low Carbon Hydrogen Development Program (PHBC) tax Credits (Law No. 14.990/2024) and several tax incentives granted by state governments.

Regarding of the carbon certificates that can be obtained from the CCS activity, another Bill of Law is being discussed in National Congress (Bill of Law 2.148/2015) which deals more broadly with carbon certificattion (originating from various sources). This bill of law also provides for several specific tax rules which are likely to apply to credits originating from the CCS projects regulated by Fuel of the Future Law.



BRAZIL ENERGY JOURNAL



LEGAL FRAMEWORK AND ADDITIONAL REFERENCES

Law No. 8.723/1993: Provides for the reduction of pollutant emissions from motor vehicles and other measures.

Law No. 11.488/2007: Creates the Special Incentive Regime for Infrastructure Development (REIDI), which suspends the payment of PIS/ PASEP and COFINS levied on the sale, lease, import and provision of services related to the implementation of infrastructure projects in the transportation, ports, energy, basic sanitation and irrigation sectors.

Law No. 11.508/2007: Provides for the taxation, exchange and administrative regime of Export Processing Zones.

<u>Federal Law No. 13.576/2017</u>: Provides for the National Biofuels Policy (RenovaBio) and other measures.

Law No. 13.755/2018: Establishes mandatory requirements for the sale of

vehicles in Brazil; institutes the Rota 2030 Program - Mobility and Logistics; provides for the taxation of auto parts not produced domestically.

Decree No. 9.888/2019: Provides for the definition of compulsory annual greenhouse gas emission reduction targets for the sale of biofuels, and establishes the National Biofuels Policy Committee - RenovaBio Committee.

<u>CNPE Resolution No. 7/2021</u>: Institutes the Fuel of the Future Program, and creates the Fuel of the Future Technical Committee to propose measures to increase the use of sustainable fuels in all modes of transport.

Law No. 14.990/2024: Establishes the Low Carbon Hydrogen Development Program (PHBC).



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