

The Journey of Brazilian Biocombustíveis Ltda.: From University to Sustainable Aviation

The story of **Brazilian Biocombustíveis Ltda.**, began with a visionary idea in a laboratory of the renowned University of Rome (Italy), "La Sapienza". For more than 25 years, the brilliant Italian chemical engineer **Dr. Andrea Festuccia** has dedicated himself to the study of new possibilities for alternative biofuels, seeking innovative solutions to the growing need for clean and sustainable energy.

Dr. Andrea Festuccia, known worldwide for his contributions in the field of applied chemistry, began this journey with a laboratory research focused on the development of a more efficient and less polluting biofuel, which would be a valid, more economical and viable alternative to the traditional Biodiesel. His dedication and expertise culminated in the completion of a first phase of successful testing. What began as academic research piqued the interest of two Italian brothers, **Alessandro and Roberto Pes**, who glimpsed the commercial and global potential of this technology.



The Business Turn

The decision to transform this laboratory research into an industrial enterprise was reinforced by the entry of a Brazilian partner, entrepreneur **Silvio Carvalho Villarim**, who shared the vision of expanding the project beyond the borders of Italy. Together, the three partners decided to invest in the development of the technology, founding **Brazilian Biocombustíveis Ltda.**

In 2018, after much planning, they opened the first **experimental factory** in Macaíba, in the state of Rio Grande do



Norte, Brazil. The strategic choice of this location was aimed at facilitating easy access to raw materials and allowing greater proximity to potential markets in Latin America. The initial objective was simple: to test the feasibility of producing on a large scale the biofuel that **Dr. Andrea Festuccia** had developed in the laboratory. During this period, the Chemical Engineer Professor at UNP and UFRN in Natal (RN), **Francisco Wendell Bezerra Lopes**, also joined the team, who

contributed a lot, with his experience and knowledge, to the improvement and final development of the technology. The experimental unit and its production underwent rigorous analysis in the laboratories at UFRN in Natal, and extensive performance tests, which included the use of biofuel in automobiles, agricultural machinery, diesel generators and even boats. These tests aimed to ensure that the biofuel was not only viable but also effective in a variety of conditions of use, as well as meeting stringent performance and safety standards.

The Achievement of the Patent

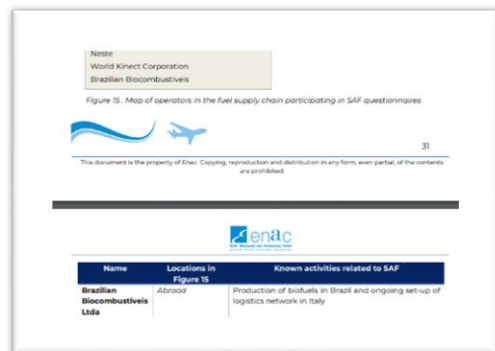
After five years of hard work, continuous investments and a series of adjustments in the production process, **Brazilian Biocombustíveis** has reached another important milestone. In 2019, after the first year of production and performance testing, the company submitted an international patent application for the revolutionary biofuel. The document was registered under the number "PCT/BR2019/050531", which would later be recognized in the national phase with the number "BR 11 2022 011447-8 AZ", with the title "Process, method and formulations for the production of an alternative fuel to the traditional Biodiesel". This technological advance was the result of the fusion between academic research and the entrepreneurial capacity of the three partners.



This patent consolidated **Brazilian Biofuels'** position in the renewable energy market, not only as a promising startup, but as a reference in the biofuels sector. The new alternative fuel offered a more sustainable and efficient solution, with a lower environmental impact compared to traditional biodiesel.

International recognition: a new stage

The apex of this successful trajectory came on October 4, 2024, when Brazilian Biocombustíveis Ltda, was officially selected by **the Ente Nazionale per l'Aviazione Civile (ENAC)**, the Italian civil aviation authority. The company has been included in the prestigious "**A Roadmap for Sustainable Aviation Fuels in Italy**" program, which aims to promote and test sustainable fuels for the airline industry, in line with the decarbonization goals of European aviation.



With this, the Brazilian company joins Italian industry giants such as **ENI SPA, Italiana Petroli SPA and Total Energies Italia SPA** in a joint effort to drive sustainability in the airline industry. The selection of Brazilian Biocombustíveis to participate in this rigorous program of emissions and performance tests for aviation fuels reinforces the global potential of the technology developed.

This collaboration places **Brazilian Biocombustíveis** in a select group of companies that are at the forefront of the energy transition in the aviation sector, one of the most challenging when it comes to implementing sustainable solutions.

The Future of Sustainable Aviation

With its technology already patented and now tested in one of the most rigorous industrial environments, **Brazilian Biocombustíveis Ltda.** is poised to revolutionize the sustainable fuels sector, not only in Brazil, but globally. The journey that began in the laboratories of the University of Rome now reaches the heights of international aviation.



This story is a testament to the power of scientific research



coupled with entrepreneurial

spirit, where innovation knows no borders. **Brazilian Biocombustíveis Ltda** is paving the way for a future in which aviation and other energy industries can operate in a more sustainable way, with less environmental impact and with technologies that integrate the best of both worlds: science and business.

