

20 years of flex-fuel vehicles in Brazil and the challenge of sustainable reinvention for the automotive industry

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In March of this year, Brazil's automotive industry celebrated the 20th anniversary of flex-fuel technology, which made it possible to fuel light-duty vehicles with ethanol, gasoline, or a mixture of both fuels. It was in March 2003 that Volkswagen launched to the national market the technology still used today through the Gol 1.6 Total Flex model.^[1]

Although flex-fuel technology was invented in the United States, it is said that the technology only became commercially possible thanks to Brazilian engineering, which created a post-combustion mathematical model.^[2]

The technology, which became common in the Brazilian market over the years, represented much more than a simple possibility of choice to the consumer at the gas station. With a lack of fuel at pumps and large price variations due to the oil crisis and inflation suffered by the population between the 1980s and 1990s, flex-fuel technology put an end to the uncertainty faced by owners of cars powered exclusively by ethanol or gasoline.

If, 20 years ago, flex-fuel cars emerged with the aim of offering consumers a more economical fuel option, today, flex-fuel vehicles represent 85% of the circulating fleet of light vehicles in Brazil, according to the National Association of Automotive Vehicle Manufacturers – Anfavea (Associação Nacional dos Fabricantes de Veículos Automotores)^[3]. Flex-fuel cars also plays a significant role for environmental preservation, given the recognition of ethanol as a fuel from a renewable source, helping to achieve targets for the sector's decarbonization.

Although electric vehicles have garnered much notoriety, investments by the Brazilian automotive industry and the acceptance by Brazilian consumers are still considered timid. For consumers, the price of electric vehicles and the lack of the infrastructure needed to drive and charge vehicles on highways would be among the main challenges. From the automakers' perspective, debate over environmental issues linked to the lithium batteries used in electric cars, the need to adapt standards, creation of tax incentives, investments in infrastructure and uncertainties over the longevity of electric vehicles have bolstered Brazilian consumers' preference for flex-fuel cars, at least for now.

Still, given the growing number of electric vehicles, and the success of flex-fuel cars, it is not unreasonable to consider that in a near future – with no need for another 20 years – the Brazilian automotive industry will reach solutions that will allow the co-existence of different sources of energy to fuel the Brazilian vehicle fleet in circulation.

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[2] See

<<https://autoesporte.globo.com/industria/noticia/2023/03/jeitinho-brasileiro-carro-flex-completa-20-anos-e-surge-como-alternativa-barata-aos-eletricos.ghtml>>

<https://exame.com/agro/carro-flex-completa-20-anos-impulsionado-pela-producao-de-etanol/>

[3] See <<https://www.linkedin.com/pulse/20-fatos-e-curiosidades-sobre-os-anos-do-carro-flex-anfavea>>.

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