Avant Propôs

The motivation to publish this book has been to discuss the main challenges facing the global energy transition and how the Brazilian biofuels are affected.

Many people, including energy experts and the media, believe biofuels still represent an old model, with many negative effects such as competing with food production and threatening ecological sanctuaries like the Amazon Forest. Unlike biofuels, electric vehicles are regarded as modern, efficient, and a cleaner alternative. This view is misguided and denote ignorance. With such attitudes, the obvious alternative leads to a substitution of biofuels for electricity. However, things are not black and white and here, in this book, we try to unveil a more realistic scenario.

First, Brazil, which is still a young democracy, struggled and succeeded to create a fossil fuel alternative that was the envy of the world for its positive impacts. For example, improvement of energy independence, creation of large number of jobs (both rural and industrial) and more importantly, the ethanol program demonstrated to be one of the few successful endogenous initiatives put together by government, entrepreneurs, and society. This great "exercise" helped Brazil to have the cleanest energy matrix among the ten largest world economies.

Second, the introduction of electric vehicles in Brazil could result in a negative balance, as far as the GHG emissions are concern. Why? Because ethanol produced in Brazil has already very low carbon footprint and there is no guaranteed that electricity, necessary to power the new vehicle fleet, will result in any environmental benefit. Large scale use of electricity poses serious problems, as stated in the book.

Brazil, the largest tropical country in the world, has much better ways to contribute to the global effort to reduce GHG emissions. Among the options, for example and as discussed in the book, is land use reform in which pastureland could be improved,

resulting in considerable positive economic and environment benefits. For example, reforestation and regrowth of part of the Amazon Forest ecosystem, will lead to more land be available for sustainable food production for a hungry world.

In this book, the authors try to demonstrate that Brazil should maintain and expand its biofuels program by ensuring more sustainable land use, and by investing in new innovating engine technologies, such hybrid vehicles and fuel cells, besides more modern process technology and sustainable feedstocks