***HEAVY TRANSPORT IN BRAZIL POWERED BY FOSSIL AND RENEWABLE VEHICULAR NATURAL GAS***

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**Overview**

The objective of this article is to analyze the replacement of diesel, in the Brazilian transport sector, by vehicular natural gas (CNG) of fossil and renewable origin (biomethane). As diesel is especially used for heavy road transport, trucks and buses, the action addresses commitments made by Brazil in 2016 in the face of the Paris Agreement. The intentions are to reduce greenhouse gas (GHG) emissions in the transportation segment, generating environmental, social and public health benefits. The results of the analysis of the current natural gas-powered fleet show that natural gas is a viable fuel alternative. This set of factors not only contributes to greater energetic efficiency, but also to sustainability policies, taking into consideration that such businesses have clear targets and objectives to decarbonize each of their production processes. It also aids the Brazilian objectives to reach greenhouse gas emissions targets. Although the production and the use of biomethane are not yet representative, it is possible to conclude that this energy source has a high added value.

**Methods**

The methodology consists of a literature review of open data from ANP, MME, ANTT, and a data collection from companies using NG-powered fleets, such as hauliers. Another point is a comparative analysis with more mature markets on this subject, in this case, European countries with high investments and a more consolidated use of NG and biomethane in the heavy fleet.

**Results**

According to Junior (2022), diversifying the energy components of a country’s transportation sector is essential to guaranteeing fuel supplies to consumers, by so increasing the dynamics and competitiveness of the market. Among the known alternative fuels, biogas is a renewable source; after upgrading to biomethane, it has a composition similar to natural gas (>90% CH4; 35-40 MJ m-3). In addition, it can be produced from various biological resources and on different scales.

**Conclusions**

The analysis of the current CNG-powered fleet in operation showed its viability within the environment used. Combining the two sources (fossil and renewable) contributes to greater efficiency in sustainability policies, understanding that the proven sector has established clear and objective targets for decarbonizing its production process, supporting the country in its quest to achieve GHG emission reduction targets.

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