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## Colombian Clean Fuel Matrix: Current Scenario and Opportunities for Biofuels Enhancement

LUNA-DELRISCO, M. A.<sup>a\*</sup>, QUINTERO SUAREZ, F.<sup>a</sup>, GONZÁLEZ PALACIO, M.<sup>a</sup>, VILLEGAS MONCADA, S.<sup>a</sup>, ARREDONDO OROZCO, C. A.<sup>a</sup>, CUATINDIOY IMBACHI, J.<sup>a</sup>, GONZÁLEZ PALACIO, L.<sup>a</sup>

*a. Universidad de Medellin, Medellin.*

*\* Mario Alberto Luna, mluna@udem.edu.co*

### Abstract

In Colombia, since 2005, diverse technologies for biofuels production have been studied and implemented in the search for alternatives to fossil fuels. The main biofuels produced in the Colombian fuel matrix are bioethanol and biodiesel. Only few cases are reported on industrial biogas production. This study presents the Colombian biofuel potential and the actions expected for its development in the national market. The main findings of this research study are: Colombian biofuels regulatory framework is constantly being updated, strategies for the development of bio-based economies on rural areas in small-scale production facilities is being promoted, and sustainable rural developments practices based on GIS modelling are being considered. The main objective of this paper is to evaluate the impact of biofuels on the transportation sector, to assess the opportunities for the Colombian fuel matrix, and to assess the preparedness of the regulation to promote and sustain biofuels on the market. Further research is expected to forecast biomass valorisation scenarios in which studies based on second generation biomass conversion technologies are needed to validate economic feasibility of new projects of industrial facilities.

*Keywords: Biofuels, energy matrix, diversification strategies, regulatory framework*