

## **Proposal of Methodology Based on Technical Characterization and Quantitative Contrast of CO<sub>2</sub> Emissions for the Migration to Electric Mobility of the Vehicle Fleet: Case Study of Electric Companies in Ecuador**

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**Abstract :** The increase of CO<sub>2</sub> emissions in the atmosphere and its impact on climate change is a global concern. The transportation sector is a significant consumer of fossil fuels and contributes significantly to greenhouse gas emissions. The current challenge is to find ways to reduce the use of fossil fuels in transportation. In Ecuador, where 92% of electricity is generated from clean sources, the concept of e-mobility is considered an attractive alternative to address the challenge of sustainable mobility. The proposal is to migrate from combustion-powered vehicles to electric vehicles in the electric companies of Ecuador, using a methodology to standardize criteria, determine specific requirements, contrast technical characteristics, and estimate emission reductions. The results showed that there are three categories of vehicles that have electric counterparts suitable for performing activities under certain operation parameters inherent to current technology limitations but with a significant contribution to the reduction of annual CO<sub>2</sub> emissions.

**Keywords :** climate change, electro mobility, energy, sustainable transportation

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