

## **Analysis of Energy Required for the Massive Incorporation of Electric Buses in the City of Ambato - Ecuador**

**Authors :** Paola Quintana, Angélica Vaca, Sebastián Villacres, Henry Acurio

**Abstract :** Ecuador through the Organic Law of Energy Efficiency establishes that "Starting in the year 2025, all vehicles that are incorporated into the urban and inter-parroquial public transport service must only be electric", this marks a foundation for the introduction of electric mobility in the country. The present investigation is based on developing an analysis and projection of the Energy Required for the incorporation of electric buses for public passenger transport in the city of Ambato-Ecuador, taking into account the useful life of the vehicle fleet, number of existing vehicles and analysis of transport routes in the study city. The energy demand based on the vehicular dynamics is analyzed, determination of equations for the calculation of force in the wheel since it is considered a variable of slope due to the fact that this has a great incidence in the autonomy when speaking of electric mobility, later the energy analysis applied to public transport routes, finally a projection of the energy requirement is made based on the change of public transport units according to their useful life.

**Keywords :** public transport, electric mobility, energy, ecuador

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