



# Academic<sup>th</sup>

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“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

## Projection of Energy Efficiency Gains by Using the Hybrid System in the Public Transport of Passengers

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### Abstract

Although the concept of sustainability be placed in the context of cities with emphasis on balance of economic, ecological and social dimensions, the collective passenger transport in urban centers of large cities is a major challenge for public management, both for mobility urban as for the reduction of pollutant emissions and respiratory diseases. For example, the majority of vehicles for public transport are operated with diesel fuel and / or biodiesel which generally raises a concern due to adverse effects on human health caused by the emission of particulate matter. In this sense, the public transport of passengers performed by hybrid vehicles can be an alternative to reduce the emission of pollutants. This work aims to analyze the feasibility of replacing the vehicle fleet diesel for hybrid vehicles in the city of São Paulo. Thus, there was the projection calculation for renewal of the bus fleet of the city of São Paulo from conventional vehicles to hybrids considering a renewal rate of 10% per year. The results showed that the planning of replacement for hybrid vehicles by 2024, would reduce CO<sub>2</sub> by 77.5%, thus contributing to the environment, better air quality in the São Paulo city center and reduction of respiratory diseases and cardiovascular.

**Keywords:** *Fossil Fuels, urban centers, cleaner transport, Sao Paulo.*