Urban mobility is often singled out as one of the main challenges of our modern society. The theme is complex, as passenger transport involves issues related to the population’s quality of life, where they live, work, play, and move from one place to another. Fortunately, in 2012 the National Urban Mobility Policy was enacted, which establishes priorities for the formulation of urban mobility plans within Brazilian municipalities, aligned with the main strategies to reduce greenhouse gas emissions: prioritize active transport and public transportation over individual motorized transport.

Passenger transportation is currently the highest emitting source within the energy and industry sector. Emissions have grown considerably over the past few years: 64% from 2000 to 2015.

THE AUTOMOBILE

The main source of greenhouse gas emissions from passenger transport is the automobile. Since 2009 Brazil has gone through a steep increase in car use and ownership, directly impacting GHG emissions. This growth has different causes, including increases in the Brazilian average income, but also key federal policies, such as subsidies to carbon intensive fuels, and a major reduction in the tax on industrialized products (IPI) motor vehicles purchases.

A recent study by the Institute for Energy and the Environment (IEMA) shows that, in São Paulo, the car is responsible for 72.6% of pollutant emissions — despite only carrying 30% of passengers — compared to 3.1% of municipal bus emissions. With this situation, we have cars providing more than 70% of GHG emissions, transporting a third of passengers, and occupying a disproportional share of the public space.

In Brazil, from 2001 to 2012, the increase in individual motorized vehicle ownership was 10 times higher than the increase in population. As a result, by the end of 2012 the country had more than 50.2 million cars and 19.9 million motorcycles.

Given these recent current trends in car ownership, currently more than 70% of passenger transport GHG emissions arise from cars and motorcycles. Emission intensity per passenger transported is very different between cars and motorcycles, and subways and buses.

EMISSIONS PROFILE – GHG EMISSION SOURCES AND INTENSITY

Source: SEEG 2017

Index of CO2 emissions per passenger kilometer – Brazil

Source: IPEA 2014

1. Sources: Intergovernmental Panel on Climate Change (IPCC), Embrapa Agrobiology, National Department of Transit (Denatran), The State of São Paulo, Institute for Climate and Society (ICS), Institute for Energy and the Environment (IEMA).

FUEL AND CAR USE

Although Brazil is a global leader in the production of ethanol together with the United States – with about 90% of all ethanol consumed in the world – gasoline is still the fuel most used in the country. Emissions from passenger transport will increase in the long-term due to the continued growth in the use of cars and motorcycles.

Another crucial indicator that brings an important social component to the discussion of urban mobility is the average travel time, which has steadily increased in the main metropolitan regions of the country.

HOW TO REDUCE EMISSIONS?

To change this scenario, it is necessary to define strategies that seek to avoid trips, change the way they are undertaken and improve the quality of all modalities. These include:

ACTIVE TRANSPORT: improving policies and infrastructure for pedestrian mobility and by bicycle

PUBLIC TRANSPORT: improve the quality of public transportation, especially buses, expand the medium and high capacity transportation system, and promote the electrification of public transportation systems.

INDIVIDUAL MOTORIZED TRANSPORTATION: promoting the transition to electric vehicles and reduce dependency on cars and motorcycles.

URBAN PLANNING: Create policies to encourage compact and polycentric cities, with public spaces that do not give priority to cars.

NDC

In its NDC, Brazil has committed itself to increasing the share of sustainable bioenergy in the Brazilian energy matrix to approximately 18% by 2030, including sustainable biofuels. Specifically, for the transport sector, the objective is to promote efficiency measures, improvements in transport infrastructure and public transport in urban areas.

More than a commitment to emissions, it is important to note that investing in the transportation sector can bring substantial quality of life and the well-being of the population as a co-benefit. Investments in urban mobility reduce the time spent on travel, improve access to the city, enhance improve health and safety, and bring local economic vitality and the creation of employment opportunities.

AVERAGE TRAVEL TIME IN BRAZIL