

# Metropolitan Area of the Aburrá Valley (Colombia)

## ECOLOGISTICS PROJECT CITY PROFILE

### ABOUT THE CITY

The Aburrá Valley is located in an area of low latitudes, on the western slope of the Colombian Andean fringe of the Cordillera Central mountain range. It is the natural basin of the Medellín river. The Metropolitan area created in 1980 was the first in Colombia and consists of 10 municipalities: Medellín, Barbosa, Giradota, Copacabana, Bello, Envigado, Itagüí, La Estrella, Sabaneta and Caldas. These 10 municipalities are similar to each other in physical, environmental, economic and social terms, which confers to the area the sense of a whole entity. Medellín is the second largest city in Colombia and the major hub for economic activities in the metropolitan region. It has a population close to 2.5 million inhabitants and is spread over an area of 380 km<sup>2</sup>. The metropolitan area of Medellín contributes to 11 percent of Colombia's economy.



### City transport

#### PASSENGER

The Metropolitan Area of the Aburrá Valley (AMVA) has constructed 120 kilometers of cycling infrastructure, accompanied by street parks, cycle parks and public space improvement projects. The country's first public bike-sharing system, EnCicla, is expected to expand to 150 stations spread throughout the territory in 2019, reaching Barbosa, Giradota, Copacabana, Bello, Envigado, Itagüí, La Estrella and Caldas. The new stations will incorporate cycling into the Integrated Transport System of the Aburrá Valley (SITVA). The metropolitan area is well connected through a network of metro, cable car and bus lines, making Medellín a leader in the field of urban sustainability.



MODAL SHARE (2017)

Public transport	34%
Walking	28%
Private transport	25%
Taxi	7%
Others	5%
Cycling	1%

#### Land area

Total area: 1,157.39 km<sup>2</sup>

#### Population

3,909,729 inhabitants (2018)

#### Population density

3,104 inhabitants/km<sup>2</sup>

#### Name of the Mayor

Federico Gutiérrez (Medellín)

#### Main website (municipality)

[www.metropol.gov.co](http://www.metropol.gov.co)

Training programs on eco-driving for public bus drivers are provided to save fuel and contribute indirectly to a reduction in the emission of polluting particles, with the aim of reducing the annual emissions of CO<sub>2</sub> from public transport vehicles by 17,000 tons. Through updates and modernization measures, 60 percent of the buses in the region operate today with clean fuels (Euro 4 Standard).

#### FREIGHT

The main road network of the metropolitan region extends from north to south through 10 municipalities along the Aburrá river and its valley. The major freight movements occur around there. Along these routes are large industries and concentration centers for cargo, such as container yards in the municipality of Caldas, the Wholesale Center of Supplies in Itagüí, the Retailer of Supplies and Livestock Fair in Medellín, industrial centers and winery complexes, especially in the municipalities of the north (Barbosa, Giradota) and south (Caldas, Sabaneta, La Estrella, Itagüí).

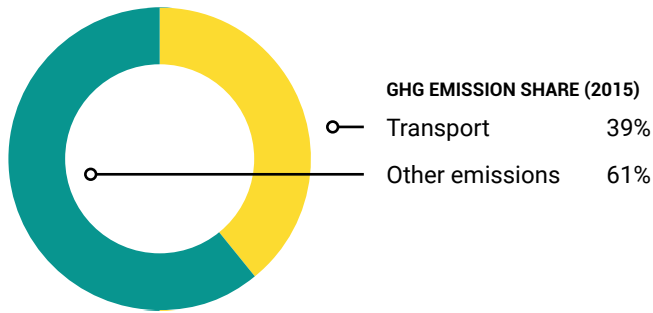
As per recent studies conducted by the AMVA, **187,213** tons of freight volume is moved in, out and through the metropolitan region every day with a total of nearly 30,000 trips per day made by various freight vehicles. The majority of the trips are made by C2P<sup>6</sup> vehicles followed by C2G<sup>7</sup> ones. The majority of trips are made through (13,547 trips) or inside (11,868 trips) the metropolitan region.

AMVA also has updated information on the vehicles used for waste management (including solid waste, hospital and industrial waste). An average waste volume of 3,566 tons per day is transported in the metropolitan area through 343 collection vehicles operating with diesel and gasoline vehicles.

<sup>6</sup> Truck (Gross vehicle weight: 3.5t-7.5t)

<sup>7</sup> Truck (Gross vehicle weight: 7.5t-18t)

## GHG EMISSIONS PROFILE



The AMVA has prepared a GHG inventory according to the IPCC methodology, and most recently updated this inventory in 2018. In total, the valley's annual emissions amount to 7.08 million tons CO<sub>2</sub>e. According to the inventory, the sector with the highest GHG emissions in the AMVA is energy, followed by the transport sector. Land transport is responsible for 39 percent of the total emissions of GHG in the city.

In the Aburrá Valley, mobile sources (transportation sector) emit 1,159 tons PM<sub>2.5</sub> per year, or 79 percent

of all PM<sub>2.5</sub> emissions in the area. Stationary sources from the industrial sector contribute 306 tons per year (21 percent) of this pollutant. Over a third of the PM<sub>2.5</sub> emissions are emitted by trucks and 22 percent correspond to dump trucks (*volquetas*), making it necessary to work on different fronts and adopt multiple strategies to achieve satisfactory air quality.

## TRANSPORT DECARBONIZATION STRATEGIES

The Aburrá Valley is working on the creation of a model of logistical organization that can improve the competitiveness of the region by reducing costs and operating times, optimizing the use of road infrastructure and reducing the environmental impact of freight vehicles in the metropolitan territory. This strategy is implemented through the regional Logistics Alliance, a survey on the origins and destinations of cargo and policies for the proper management of freight transport in the urban environment.

The Management Plan 2016-2019 of the Metropolitan Area of the Aburrá Valley, "We are 10 Integrated Territories," has as a fundamental goal of supporting sustainable, integrated human development and establishing human and territorial equity. The plan is comprised of six strategic axes. The third of these is the creation of sustainable, safe and friendly mobility. To achieve this, the plan addresses the integration of metropolitan public transport, the promotion of this transport and other active mobility alternatives, logistical organization, road safety and regional connectivity. Various resolutions have been passed over the years in support of sustainable transport, with the following focusing on the movement of freight:

- Restrictions on traffic hours and circulation for vehicles with a capacities over 4 and 5 tons in specific areas of the city
- Restrictions and regulations on schedules for loading, unloading and parking in the center of Medellín
- Determining the main roads and other streets in the city on which parking, loading and unloading must be regulated

The following actions have been taken by the AMVA in order to promote sustainable freight movement:

- A freight transport study in the Aburrá Valley (2018) that investigates the features of freight transport in the region of the Aburrá Valley metropolitan area
- Freight transport initiatives to optimize loading in congested areas (71 initiatives implemented).
- Eco-efficient driving training programs to reduce fuel consumption.
- A vehicle fleet renewal project, with travel demand management strategies.

